TRAINING CHILDREN TO STUDY

Practical Suggestions

BY

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NEW YORK CITY

D. C. HEATH AND COMPANY

BOSTON NEW YORK CHICAGO

ATLANTA SAN FRANCISCO DALLAS

LONDON

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PRINTED IN U. S. A.

To the memory of

MARGARET VAN DYCK WIGHT

Principal of a Branch of the Ethical Culture School
1893–1904

She was an inspiration to her colleagues,
a guide and playmate of the children
under her care.

PREFACE

It is a mistake to suppose that a child who is given no suggestions as to methods of study but time and again is merely told to study such and such a lesson, will go about it with any definite plan. He will probably do one of two things; simply read it through once or twice, trusting to luck that he will remember enough to be able to answer any questions the teacher may ask, or he will attempt to memorize it *en bloc*, thinking that then surely the correct answer will be forthcoming.

Under such circumstances the emphasis is placed on the absorption of as large an amount of material as possible, not on the understanding of the material; and on marks rather than on gain in power.

If we are to produce citizens who will react intelligently to the life about them, we must teach children to analyze the subject matter with which they deal, to discriminate between important and minor points, to trace causal relations, to estimate ethical values, to question the validity of statements, to suspend judgment until data have been accumulated sufficient to justify generalization.

The following pages constitute an attempt to outline the work which has been done along these lines in the Fifth, Sixth, and Seventh Grades of one department of the Ethical Culture School.

The greater part of the book is given over to a discussion of the content subjects, history, geography, and so forth, rather than to the tool subjects.[1] While there are both

[1] This subject is amplified in the chapter on "Mastery of Certain Common Tools," pp. 211–229.

better and poorer methods of drill, the goal obvious to pupil as well as to teacher in the case of the tool subjects is complete mastery of something not to be questioned; for example, the multiplication table, spelling, and punctuation.

It is when we place in children's hands a textbook organized according to the author's point of view, colored by the author's opinion, that we need to train them in the elements of study as listed above.

Literature when instructive falls under the head of content material. In its æsthetic aspects, a thing to be enjoyed and appreciated, it is not studied in quite the sense in which the word is employed here.

On the other hand, creative English is given a section to itself, in which it is shown how, in contrast to organizing and balancing the thoughts of an author, children are taught to organize and balance their own ideas in their effort to express them for the instruction or delight of their readers.

The first factor to be considered is the coöperation of the child. We may be amused at Irving's inimitable description of Ichabod Crane as with the birch he "urged some tardy loiterer along the flowery paths of knowledge," but if we really wish our pupils to become citizens who will function helpfully as men and women (and why else teach at all?), we do not follow his method either actually or in spirit. Not the rod, but the will to learn, is the first requisite for success in learning how to study. We may force the uninterested pupil to follow certain steps, but there will be little chance of his following them voluntarily, once the pressure is removed.

We do not intend to convey the impression that it is necessary or possible to secure the interest of every pupil

all the time. But in the atmosphere of the classroom there must be an enthusiasm that will sustain most of the pupils during periods of necessary drudgery.

How then are we to maintain this enthusiasm? There are those who say it can be done only by allowing the child to choose what he will study and how he will go about it. Undoubtedly in the past the child has had far too little to say about his own education, and the makers of curricula today, for the most part, utterly disregard individual differences in children. Having planned a course of study, they consider it suitable for all normal children. Children of a wide range of mentality, some with very special talents, some with special inaptitudes, all must cover the same ground, unless adjudged subnormal. This is irrational, and in revolt against this senseless uniformity the pendulum has started on a long swing in the other direction. Is it fair to the child to expect him to be able to choose paths when he cannot know where they lead? Talents and deficiencies should surely be taken into consideration in planning a child's education, but the child himself (below the high school certainly), seldom if ever knows what subjects will best develop his possibilities. He may choose a subject because an older brother has been interested in it, or because he has seen one book that interested him, and later may regret his choice.

Moreover, with the best will in the world, the teacher can scarcely help influencing the choice by some unconscious look or inflection. Some teachers, feeling that certain subjects are best for the children, and on the other hand that children should exercise choice, try to secure both results by deliberately "setting the stage so that the children will be sure to choose the right thing." This is a species of "hocus-pocus" belittling to teacher and pupils.

Not thus can we discover each child's bent and develop individuality sufficiently to secure from each his best contribution.

There should be opportunities for initiative and selection, many of them. Individuality cannot be developed unless the child is frequently encouraged to exercise individuality. But interest can be aroused and sustained in required subjects if they are suited to the child's mental capacity. Of that suitability he is frequently a poor judge through complete ignorance of what the name of a topic connotes. Yet he cannot be fitted to make his best contribution now, or hereafter except by being introduced to all the fundamental aspects of human knowledge and endeavor. The choice of socially worth-while problems and their arrangement in some kind of reasonable sequence cannot fairly be left entirely to the pupil with his narrow horizon and immature judgment. In his address, delivered at the Eighth Annual Conference of the Progressive Education Association, March, 1928, Dr. Dewey left no doubt of his position:

> . . . "the teacher, as the member of the group having the riper and fuller experience and the greater insight into the possibilities of continuous development found in any suggested project, has not only the right but the duty to suggest lines of activity, . . . there need not be any fear of adult imposition provided the teacher knows children as well as subjects . . . . progressive schools by virtue of being progressive, and not in spite of that fact, are under the necessity of finding projects which involve an orderly development and interconnection of subject-matter, since otherwise there can be no sufficiently complex and long-span undertaking."

If then it is not necessary to allow the child always to lead, how shall we be guided in securing the child's interest? By calling into play the child's natural impulses, the impulse to investigate, the impulse to communicate, the constructive impulse, etc. Give him a question to

answer, a problem to solve; give him a chance to pass on the information he has acquired or to construct something which will illustrate the matter in hand. Once thoroughly interested, children are usually glad of suggestions as to ways and means of achieving the desired result, and study periods are frequently times when the teacher is very actively engaged in unfolding to the children methods which later they will be expected to follow independently.

Methods of study differ with the subjects under consideration; for example, observation of natural phenomena as in nature study, experimentation and manipulation of materials as in industrial art, or interpretation of thoughts and feelings as reflected in actions, as in history and literature. Sometimes the teacher gives direct instruction in some new study procedure. Frequently it is desirable for her to analyze a problem with a class, helping them to select the particular method best adapted to its solution. As various modes of attack are mastered there should be many times when the pupils are left to select for themselves, given the chance to make mistakes and grow towards student independence.

Always in the teacher's mind there should be consciousness of the underlying principles which must influence procedure in any given instance. She must bear in mind that the child needs to be taught to study always with a specific purpose; that he must be instructed in effective methods of collecting and organizing data, and in the application of these data to new situations; that he needs direct teaching in the most scientific methods of memorizing and careful guidance in order that he may attain free and forceful self-expression. Furthermore, the teacher must maintain about immature children, and encourage them more and more to maintain about themselves, an

atmosphere congenial to the attitudes which are essential for the student, curiosity, initiative, perseverance, suspended judgment, repeated self-testing of knowledge gained and, permeating all, the sense of social responsibility.

There has been in the preparation of this book no attempt at an exhaustive treatment of the subject, and there is no claim to originality in any principle expounded. If the book deserves a place among the multiplicity of treatises on kindred lines it is that it walks modestly but firmly upon the solid ground of attainment in elementary classrooms rather than soaring on the wings of theory and speculation from college lecture halls. It shows what has actually been done by a group of teachers. Illustrations of their obvious failures and apparent successes are given in examples of children's work as they slowly acquire methods of study.

I desire to express my indebtedness to my colleagues. Without their helpful coöperation the book could never have been written. They have furnished without stint records of lessons and specimens of children's work, have read manuscript, and made many helpful suggestions. Thanks are due to Miss Helga R. Mortenson and Miss Elizabeth L. Gillingham for the material in sections dealing with English composition and geography, respectively. Mrs. Florence D. Brown and Miss Anna Gillingham have furnished data for the passages devoted to mathematics; and Miss Bertha Klaer for those devoted to science. Mrs. Marie B. Moore has given many practical suggestions for working out study methods in the classrooms.

I am especially indebted to the Principal of the Open Air Department, Miss Anna Gillingham, not only for help given in innumerable ways in connection with the actual writing of the manuscript, but for inspiration and unfailing en-

couragement throughout the years of experimentation during which the methods herein described have been tried out.

Very valuable suggestions have been made by Drs. Henry H. Goddard, Vivian T. Thayer, and Boyd H. Bode of Ohio State University, all of whom have read the manuscript. Their advice and encouragement are deeply appreciated.

I am most grateful to Mrs. R. G. Stone for the many hours she has devoted to the tedious task of proof reading.

To Dr. Frank M. McMurry I would express thanks not only for reading and criticizing the manuscript, but for the inspiration furnished by his book *How to Study and Teaching How to Study*. In common with a host of other teachers I have been guided by it in much of my classroom procedure. Many of the "practical suggestions" are based on the theories expounded in that book.

BESSIE W. STILLMAN.

New York City,
June 4, 1928.

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INTRODUCTION

There has not always been a close relation between studying and thinking. In fact a generation ago when studying meant simply the acquiring of facts, there was scarcely any relation between the two. To be sure teachers now and then were heard to demand that the children "think and think hard"; but it was a very thoughtless requirement, for few teachers in such cases could have shown the children how to meet the demand. Probably even now it is exceptional for studying to be anything more than the memorization of facts. Only three years ago one of our leading University presidents took the position in a magazine article that thinking should be the goal of college instruction, and he maintained that view as though it was something new.

In theory now very many teachers want studying to be real thinking, and some of those identified with the primary school believe that even the quality of instruction in the tool subjects should be determined by the extent to which the elements of good thinking are provided for. The reason for this general view is that right method of thinking is seen to have a far wider use in life than the facts acquired through instruction. The right way of thinking is in demand all the time, while there is so little need for most of the facts of subject matter that they are soon forgotten. We have not reached the point where examination on method of study is advocated as the main test of the learner's progress; but that time is certainly coming. How

much do we now know about the thinking process? A good deal. We know that thinking takes place in units of effort in which the motive power and the basis for the selection and organization of ideas are found in a difficulty of some sort that we desire to solve, and in which other large elements are planning, executing, and testing out. Persons who have read understandingly only the first few chapters of Dewey's *How to Think* have a pretty clear conception of the outline of the thinking process.

What remains to be done, then, more than to apply this conception in each of our many branches of study? Nothing at all. But there lies the rub; for there is a host of difficulties in the way of making this application.

The first difficulty is the fact that the ordinary curriculum is unfavorable to study; it scarcely allows it. For example, New York City used to have as its required work for one-half year in geography for the fourth grade the study of seventeen of our states, the most important seventeen, among which were New York and California. Facts covering the boundary, capital, main cities, and products for each state had to be learned. Under such conditions good thinking was scarcely possible; the only thing to do was to memorize the thousand facts wanted. The slow progress we are making in the attempt to functionalize our subject matter indicates how difficult it is to select matter that plainly relates to the learner's life. Yet the feeling of a close relation is the first condition for good study by the child. When we recall that most of our courses of study have been made out more from the point of view of an outline of the subject rather than from that of the child, we realize how great this difficulty is.

If the question is asked, why don't we get to work and quickly produce the right kind of curriculum, the answer

is again discouraging. One is that we do not yet know child nature well enough to determine what it most naturally feeds upon. Child study is a new subject; it has not been many years since G. Stanley Hall first attacked the problem, and up to the present time there is much more enthusiasm about it than definite and usable knowledge.

Besides this, it must be emphasized that method of study is not a fixed procedure that can quickly be adapted to each branch of study after its content has been carefully selected. It must always be to a considerable extent an outgrowth of the particular subject. The method of studying literature is different from that of arithmetic; and the method for arithmetic is different from that for geography or history. I think that this fact is now pretty well understood. Yet we know very little about how subject matter should influence method and not many persons are now even vigorously at work on the problem. Indeed, it is hardly yet a recognized field of study and experiment.

There is, however, a still greater difficulty than any of these. The moment we give high rank to teaching children how to study, we are asking for a radical change in the common conception of instruction. The ordinary aim of instruction is the acquisition of facts and that is what children are examined on, as we have stated. But when method of study is raised to prominence it really becomes our aim which tends to supersede knowledge. Proper study is seen to be one of the very conditions of knowledge. It is so vital both in that respect and in others, that study habits become the basis for judging teaching, and consequently the main thing on which children should be examined. The controlling point of view in the classroom is then the child's growth rather than his mastery of subject

matter; and to attain that end, both the teacher and the subject matter must be subordinated to the child. Such a double subordination would be a very radical departure from prevailing practice. It will be a long time before teachers will thus place the center of gravity of the classroom in the children themselves.

But suppose that they now saw the need of doing this; how should they proceed to bring it about? There is extremely little literature on the method of studying the different subjects, so that they could not get much help from that source. The other main source could be the extensive experience each teacher has had on her own method of study. Everyone has a method of some sort; and an analysis of it could not help but throw much light upon children's methods. But, again, the difficulty is that teachers are so close to their own method that they cannot see it; they are unconscious of it. It is a big struggle to bring it into consciousness so as to observe it closely and improve it.

Considering all these difficulties how shall progress be undertaken? The main help must come by experimenting with children on their method of getting their lessons. The teacher can observe their present procedure closely, and, if she keeps in mind the outline of good thinking, she can suggest little ways in which these procedures can be improved. As time passes and better subject matter is put into the curriculum, larger improvements can be effected. I see no better plan than this at the present time.

This is the point at which the great value of this book becomes evident. There are many broad questions to be faced in teaching children to study: for example, the assignment of the lesson so that the child's initiative is exercised rather than stifled; the proper taking of notes; the use of verbal expression in the clarification of ideas; the sensing

of value to the self of what one is hearing or reading, etc., etc. This book is a presentation of attempts at a solution of such problems. For some years the author and her colleagues have conducted their classes with constant attention to the children's proper method of work; and the results are here faithfully recorded. In the course of this long experiment they have covered the main elements in proper study as these found expression in several studies, so that the experiment includes a wide range. To see teachers at work on this problem in the classroom from day to day would certainly be a great aid to anyone interested in method of study; and this book gives its readers that opportunity. Even though one finds the conclusions not directly applicable in one's own teaching, the method of procedure and results must prove highly suggestive for method of study in other subjects and under other conditions.

FRANK M. MCMURRY.

Yonkers, New York,
March 1, 1928.

INTRODUCTORY CHAPTER

By Boyd H. Bode

THE PLACE OF THINKING IN EDUCATION

Perhaps the most significant sign of the times is the fact that there is everywhere a growing belief in the need and value of education. Illiteracy is becoming more and more uncommon, the period of school attendance is lengthening, and the standards of teacher training are constantly going up. There is more discussion of education and more experimentation in this field than at any previous time.

In one sense the belief in education is not a new thing, but as old as humanity itself. Every community, however primitive, has a certain stock of racial experience which it desires to transmit to its children. How to secure food and shelter, how to avoid danger, how to distinguish between what is desirable and what is undesirable in conduct, or between what is noble and what is ignoble—on matters of this sort every form of community or group life has a certain body of experience and tradition which constitutes a legacy for every new member that is born into its circle. But this legacy is not passed on automatically, like the shape of the nose or the color of the skin; it can be acquired only by a process of education.

A great deal of this education is very simple and direct. Children learn to dress themselves, to behave properly at table, to avoid tracking dirt into the house, to wash behind the ears, and other things of social value, by methods known

to every mother of a family. This form of education is continued and extended on the street, in the workshop, in the market place, and wherever associated living is going on. Children are subjected from the start to social pressure in all sorts of ways, and by this pressure their habits and standards are molded. They thus acquire a certain body of knowledge regarding their material and social environment and they also acquire ideals of conduct. Some things are admired by the group, while others are condemned; and these approvals and disapprovals become, by a sort of contagion, the source of the ideals and the inspirations of the younger generation. Listening to camp-fire stories of prowess and endurance, the Indian boy became fired with the ambition to grow into a great warrior, possessed of many scalps as trophies, and feared by his enemies for deeds of torture and slaughter; just as in earlier times Greek lads learned from the Homeric bards the meaning of piety, magnanimity, and nobility of character. All this is education, although it may have nothing to do with schools.

In modern society such out-of-school education is no longer sufficient for the conservation of racial experience. A little reflection will show why this is the case. Many of the activities carried on at the present time require special preparation; they cannot be learned through direct participation. A boy may learn the arts of hunting, fishing, warfare, or the raising of crops, by sharing in these occupations, without any school training. But he cannot hope by any such process of sharing to become a physician or a lawyer or an engineer. He is excluded from the start; and this applies also to the thousand and one everyday activities and interests which require a knowledge of the three R's. The child does not absorb such knowledge from mere association, any more than a janitor in a college building is likely

to acquire, by virtue of association, a liberal education. Schools become indispensable, if the experience of the past is to be conserved. That is to say, certain subject matter must be specially selected and graded so that pupils will finally reach a point where direct sharing is possible. Thus reading is taught, not by using current newspapers and magazines, but by beginning on the level of the primer and proceeding to more difficult material in accordance with the pupil's rate of learning. Much the same thing might be said regarding the other subjects commonly taught in the schools. In other words, the school constitutes a special environment to facilitate the business of learning.

The school, therefore, is an institution by means of which society provides for its own perpetuation. It is the only alternative to a relapse into barbarism. But this new institution has created a new problem. The problem is to keep the school from becoming a little world all by itself, apart from the larger life by which it was created and which it is supposed to serve. Learning outside of school is for the purpose of interpreting our material and social environment; learning in school easily becomes an end itself, without reference to anything else. When the pupil enters the schoolroom, the door seems to close on the outside world. He may learn that the earth is round, that Columbus discovered America in 1492, or that Washington was the first President, but this information appears to make no appreciable difference when he goes back home after school has been dismissed. The school and the life outside the school remain on two different levels; with the result that the work of the school tends constantly to become a matter of rote learning. The assignments are just so many lessons or tasks which, except in the case of the fortunate few, have no inherent interest or significance.

It is only within comparatively recent times that this difficulty has been properly recognized and understood. For a long time the failure of the schools to arouse genuine interest was attributed to the natural wickedness of children, who must be perpetually flogged for the good of their souls. Now we are coming to realize that the trouble is not so much with the wickedness of children as with the stupidity of educators. The school became dissociated from the normal affairs and interests of everyday life because teachers failed to understand that the purpose of education is, first of all, to initiate the pupil into the society of which he is a part; and that schools are maintained because, to some extent or in some respects, they can conduct this initiation more effectively than can be done outside. The teachers as a class tended to misconceive the purpose of the schools and so the results which were achieved were naturally unsatisfactory.

From our present standpoint the school is properly a substitute for the natural social environment. The actual environment has grown so complex that the average person can go but a little way in understanding it, unless he has special assistance. A person who does not learn to read in school stands little chance of learning to read at all, in spite of the fact that he is surrounded by newspapers, magazines, and books. Similarly his everyday life, although it brings him into frequent contact with the world of business, government, and applied science, gives him no significant comprehension of these matters. Such an individual is only a few removes from the level of his dog, which likewise spends its life among these achievements of civilization but which is interested in the things of its environment chiefly as things to be smelled and things to be barked at. But unfortunately the school environment

which we substitute for the natural environment easily becomes an artificial thing, in the sense that the learning which goes on in the schools tends to become an essentially different kind of thing from the learning outside of the schools. This difference is the source of all kinds of problems and difficulties. The outstanding educational problem, therefore, is to make the schools more nearly continuous with life so as to enable the pupil to participate in adult activities and to contribute to their improvement. If we adopt this point of view, it follows that educational reform must take its cue from an analysis of the learning process, in order to determine ideals for schoolroom procedure.

It has been customary for a long time to think of learning as a process of adding new items of information to the stock of knowledge which we already possess, in much the same way that a moving picture camera keeps adding new impressions to those which have already been recorded. There is much reason, however, to think that such a view is far too simple. The learning process—if an analogy is appropriate—is more like a chemical change, in which every addition of a new substance involves a transformation of the whole mass. Thus if hydrogen and oxygen are brought together under certain conditions, the different elements are not simply placed side by side, like marbles in a bag, but the hydrogen and oxygen disappear completely and are replaced by a different substance, which we call *water*. In somewhat the same way the original "blooming, buzzing confusion" which, according to William James, constitutes the experience of the infant, is progressively replaced by an orderly arrangement of things, which are spread out in space and time and which compose what we call our environment. From an educational standpoint

the important thing in learning is not the sheer adding of new information, but the reconstruction or making over of what we knew before.

This process of reconstruction is especially marked when we consider the procedure of intelligence in the overcoming of practical difficulties. A man is injured and there is no ambulance or stretcher available. A door taken from its hinges will serve as a stretcher! Here an old and familiar object, a door, is suddenly seen in a new context or setting; it is endowed with a new meaning. The surface of the door will support the body of the man; the four corners of the door will serve for purposes of lifting and carrying; the wood of which the door is made is light enough to make the lifting and carrying possible. Perhaps further considerations present themselves--the owner of the door is kind-hearted and will approve the utilization of the door for this purpose; the case is urgent, so that the taking of the door without the owner's consent is morally and legally justifiable, etc. It is evident that the door thus becomes the center of a new set of relations; psychologically or subjectively the door becomes a very different kind of object from any that has been experienced before. A new fact has been discovered, viz., that a door can be used as a substitute for a stretcher, but this discovery involves the reorganization of a considerable body of previous experience. It is necessary to bring to bear our previous knowledge of wood, of lifting and carrying, and the like, before we can effectively visualize the door as a substitute for a stretcher.

In this illustration the interaction between new and old facts is especially worthy of attention. It is evident, in the first place, that previous experience functions so as to give character or meaning to the new. When Columbus reached the shores of America, the Indians, never having seen sailing

vessels before, called them birds. This modification or interpretation of the new by the old is what Herbart called *apperception.* But, secondly, the effect of the new fact upon previous experience is also quite direct and unmistakable. If we classify a sailing vessel as a bird, it becomes necessary to revise our notion of "bird" very considerably. Or to change the illustration, when we learn, for example, that the earth moves around the sun, it is necessary to revise the background of our previous experience very extensively in order to make room for this new fact. We get a different notion of north and south, of up and down, of weight, and of the whole material universe as a system dominated by the law of gravitation.

It is by this process of interaction that experience grows, both in extent and in depth. In the case of superficial or perfunctory learning the interrelation between the new fact and the experiential background is at a minimum. Such learning is exemplified by the case of the child in an Illinois school who, as Dewey relates, was able to recite what was said in the textbook regarding the Mississippi river but who did not know that this was the river that flowed past her home town. Such learning is ordinarily lacking in interest and in utility. It is the kind of learning that is sometimes designated by such derogatory expressions as "book learning" or "verbal knowledge."

The evil of such learning is commonly recognized in our schools. One reason probably why it is not remedied more successfully is that there is no adequate understanding of the nature of the learning process, and consequently no sufficient appreciation of the resources which may be employed by the teacher to insure more effective learning. It is necessary for the teacher to have, first of all, a conception of sound learning that is sufficiently definite for practical

purposes. A pupil may rehearse glibly certain facts in a class in history or geography and yet leave a disagreeable suspicion that his ability to recite is not accompanied by insight or comprehension. What is to be done about it?

Let us consider once more the nature of the difficulty. What, for example, is the difference between a schoolboy's knowledge of history and the knowledge that is possessed by a trained historian? When we proceed to investigate, we find that the schoolboy's knowledge consists, relatively speaking, of a jumble of unrelated facts. The particular items of information, it appears, are not interwoven with one another, they are not connected with an extensive background of further knowledge, but each stands by itself. Ask him, for example, to name the date of the Armistice which terminated the World War. Perhaps he can give the correct answer. But it may be that he can give no supporting testimony; he remembers the date, but he has nothing on which to base his belief in the correctness of his knowledge except the immediate deliverance of his memory.

Not so with the historian. The characteristic trait of the historian is that he is able to interrelate the date of the Armistice with all sorts of other facts. There is, for example, the further fact that the war occurred during Wilson's administration, which lasted from 1913 to 1921. The slogan for Wilson's second presidential campaign was "He kept us out of war"; consequently the Armistice must have come at a later time and must fall somewhere between 1917 and 1921. The United States became involved in the war shortly after Wilson's second inauguration, and the period of our participation lasted for about a year and a half. Moreover, the entire war was extended over a period of four years and began in 1914. In short, all these facts converge on the conclusion that the Armistice occurred in the autumn

of 1918. This bit of information does not stand by itself, but is knit together with other facts into a body of organized knowledge. This interrelation of facts explains why it is that a historian, even though he be endowed with a very ordinary power of memory, can nevertheless remember so many facts. They interlock, like the links in a chain. Moreover, while these facts may have been gleaned from books, yet the type of knowledge which is thus built up from them is as different as possible from what we call "book learning."

The conclusion to which we seem to be led by the foregoing considerations is that effective learning is a process of building up a certain kind of system or organization of fact. As was said a few moments ago, learning is more than the mechanical accumulation of new information. The new information that is to be acquired is to be regarded as a candidate for admission to the inner circle of experience. Before the candidate is accepted it must be determined how he will fit into the organization that is already in existence. Thus the suggestion that a door may be used as a stretcher cannot be accepted until it is determined that such a stretcher can be carried, that it will support a person, and so on; and before we can accept the proposition that the earth moves about the sun we must have some idea of how this proposition bears on our previous beliefs regarding the nature of weight, of up and down, and the like. Frequently it is necessary to gather further information, in the form of observations or experiments, before we can be sure. Many plausible suggestions have to be rejected because they cannot be made to fit in with other facts that are already known or that are collected for the purpose of testing the suggestion. The story of Santa Claus is a case in point, likewise the belief in witches, and the explanations of natural phe-

nomena that are furnished in mythologies. Scientific investigators usually make numerous wrong guesses before they hit upon the right one. The infant mortality in the domain of theory is very high.

Unless the pupils in our schools are trained in the habit of building up organizations of knowledge in the manner indicated, our educational system is nothing more than a device for securing parrot-like responses. On the other hand, in so far as we develop this power of organizing knowledge we are developing the power to think. Thinking is simply the capacity or ability, first, to get hold of a suggestion, idea, or meaning, and then to examine whether it should be accepted. More briefly, thinking consists in finding and testing meanings. To think is to reorganize, to reinterpret, or reconstruct. Since this is the essential feature of learning, it follows that the cultivation of thinking is the core of the educative process. New facts are learned more readily and more effectively if they are needed to build up these intellectual constructs, and these constructs become a source of new appreciations; and, finally, the power to think which is thus acquired is the best guarantee that what is learned in the schoolroom will be of service in later life.

The teacher who really succeeds in stimulating pupils to think can afford to be at peace with the world; other things will be added unto him. But to secure this result he must be resourceful; there is no possibility of reducing the art of teaching, when thus conceived, to a fixed procedure, like a manual of arms. To promote thinking is a difficult matter in the best of circumstances, and it has certain added difficulties in the case of children. It is necessary to have a realizing sense of the fact that children are not little men and little women, but just children, in

the sense that they have neither the abilities nor the disabilities which spring from established habits. The lack of such habits does indeed give children a greater capacity for interests, and a greater flexibility of mind, than is possessed by adults, who have settled more or less into certain grooves. Children are more free from bias and prejudice, and they have a singular capacity for spontaneous sympathy. But on the other hand, the lack of habits makes them more helpless than adults. Comparatively speaking, the child does not know how to approach a new assignment; he cannot pick out the central idea, he cannot distinguish between what is of major importance and what is of minor importance and what is irrelevant to a given purpose, he does not know how to gather material, nor does he know how to organize material or how to formulate it in verbal or written language. In short, he does not know how to think.

In order to teach pupils how to think it is necessary for the teacher to provide them with the tools for thinking, in the form of habits, with respect to such matters as have just been mentioned. The succeeding chapters in this book offer a variety of suggestions with reference to this end. They are offered in the conviction that the problem of thinking lies somewhere near the heart of the educative process. In the end our judgments of progress in education will have to be based on the degree of success, which we are able to secure in the promotion of thinking, since the supreme test of education lies in the capacity for creative achievement.

CHAPTER I

STIMULATING THE QUESTIONING ATTITUDE OF MIND

"Well begun is half done" is as applicable to study as to any other project, and to begin a task well—vigorously, happily—one must understand why the task is to be undertaken.

Hosts of children have crammed facts from books simply to avoid the unpleasant consequences which would follow the failure to satisfy "the powers that be." Some have striven simply to outshine their fellows. Many have worked for the higher aim of pleasing those dear to them. Still others have been anxious to "prepare for life" and have plodded faithfully, seeing little rhyme or reason in most of the things demanded of them as they went along, but having faith that somehow what they learned would be useful when they should be "grown up." A favored few have worked understandingly, with a definite purpose illuminating the way step by step.

In his epoch-making book, *How to Study and Teaching How to Study*, Dr. McMurry tells us that the demand for study arises in specific needs—"a lively consciousness of the unsatisfactoriness of a situation is the necessary prerequisite to its investigation, it furnishes the motive for it." [1]

When children can see that the knowledge acquired will further projects of keen interest to them, they are willing

[1] McMurry, Frank M., *How to Study and Teaching How to Study*, p. 13. Houghton Mifflin Co., 1909.

to undergo uncomplainingly a large amount of drudgery. Consider a group of children constructing an object to illustrate some phase of their history, something which they can use as a plaything, the model of a medieval castle, for instance. They will willingly tear newspaper into bits to be made into pulp, tear and tear and tear, long after they would have tired of aimless tearing. They search through many books for illustrations. These they examine with great care that the details of construction may be accurate. They build, tear down, and rebuild when they are not satisfied with the effect. They ask advice as to methods. And when it is done, how they love it!

Then they will set to work to write a play to be acted by puppets in and about the castle. They read many pages concerning the lives of castle-dwellers in order that their play may seem real. They write and rewrite. They willingly submit to criticism, but do not easily go down under it, as they have had real ideas to express. They are willing to substitute one phrase for another, but the teacher must produce evidence if she attempts to interfere with the idea which the children were endeavoring to make clear. Such a project provides the proper incentive for prolonged study. All the "steps" are taken voluntarily.

One can see the same eagerness and thoroughness, the same search for data, the willingness to suspend judgment until other sources of information have been consulted, the same weighing of relative values among a group of children at the sand table constructing a canal lock for the benefit of the whole class. They are eager to see it "work" and to be able to show others.

Unquestionably the most vital, thorough studying done by children is that which is necessary to solve problems which have arisen in their own minds, or which connect

with their daily lives, but they must be made acquainted with large bodies of knowledge which do not function immediately in their lives. Frequently it is necessary for them to be satisfied to understand the aim in the mind of the author when he wrote a certain passage and to follow his thought step by step.

Unfortunately, however, not all authors of textbooks are skillful in framing introductory statements which serve to make clear the aim of each chapter.[2] If obliged to use a book defective in this respect, the teacher should be especially on the alert to furnish suitable introductions. But when a child is studying alone from such a book, the recognition of the purpose of a particular selection may come only after he is well into the subject, or even after the whole has been completed. Then he may discover for himself, or if he does not, the teacher should make a special point of showing him, that the knowledge he has acquired will be of use in solving some other problem. Even this

[2] Examples of texts satisfactory in this respect are:

1. *The History of the American People*, by Charles A. Beard and William C. Bagley. The Macmillan Co. The purpose of each chapter is made clear by well-chosen chapter-headings, and by introductory paragraphs, which serve as connecting links between what has gone before and what is to follow.

2. *Elementary American History & Government*, by James A. Woodburn and Thomas F. Moran. Longmans, Green and Co. The introductory paragraphs are very satisfactory.

3. *The Nation's History*, by Arthur R. Leonard and Bertha E. Jacobs. Henry Holt and Co. Each chapter is preceded by a topical outline of the subject considered, by thought-provoking questions, and stimulating suggestions for special investigations.

4. *A Brief Topical Survey of United States History*, by Oliver P. Corman and Oscar Gerson. D. C. Heath and Co. In this book, also, topical outlines introduce the chapters.

5. *Early Settlements in America*, by John A. Long. Row, Peterson and Co. The "Questions for Discussion before Reading This Story" serve to focus thought on the especial topic to be considered, and the introductory paragraphs are very skillful prefaces.

tardy recognition of a purpose strengthens his faith in the general reasonableness of the demands made upon him. It will help him to establish the habit of being on the lookout for uses for ideas gained when such uses are not apparent at the start.

The point to be kept in mind is that as rapidly as possible children should be habituated to purposeful investigation rather than to aimless amassing of facts.

The teacher's method in development lessons has much to do with establishing the right attitude in children when they study alone.

The assignment of the matter for study is of far greater importance than common practice would indicate. The teacher is apt to leave too little time for this part of the work, and so to announce hurriedly a certain number of pages to be studied or problems to be worked.

The importance of formulating the aim of the lesson can scarcely be overestimated. The following is quoted from the geography teacher, "In whatever thing we do in teaching how to study, the definite objective in the child's mind is the largest factor in success. This may come from the child's own purpose, or from the teacher's assignment."

It may well happen that a whole lesson period may be spent in preparing the children for a period of independent study.

One of the history teachers makes the following statement in regard to specific aim, "Often, before beginning an assignment, we discuss what we already know about the subject and what we should like to find out. I add questions also and we make a list of definite facts which we must know in order to arrive at some conclusion or judgment." In other words, she strives to arouse the children's curiosity about the matter in hand.

Ways in which subjects can be presented so as to start the children to studying with a question or questions in mind are suggested by the following accounts of geography lessons:

The Sixth Grade did some arithmetic with state populations and discovered that the eight Plateau States contain less than one-third as many people as their own state, New York. Then they compared the area of New York with that of the smallest Plateau State, Utah, and found that New York was little more than half as large. These figures are thought-provoking. Naturally the question arose, "Why are there so few people there?" With this question in mind, they began the study of the Plateau States, considering the influence of their physical characteristics on the lives of their inhabitants.

In a Seventh Grade a temperature chart of North America was hung on the wall. The pupils were told to study it silently. Then they were asked to state any facts they had discovered, and any questions which they would like answered. Enough questions were propounded to furnish incentive for several periods of intensive study.

Surely such study is undertaken with more zest than is that which is directed entirely by the teacher. Indeed, by the time the children reach the Seventh Grade they should become conscious of the need of studying with questions in mind. The third geography lesson illustrates how the matter was presented to one class.

Methods of study were discussed in a Seventh Grade geography class, and a comparison made between merely *reading* pages of assignment and *studying* to find answers to questions. The class said that the latter method was more interesting. The teacher explained that it was more interesting because they had a purpose in reading:

"Up to this time, your questions have arisen in class discussion or I have given them to you. Now you may try to think out good questions for yourselves. We are about to begin the study of Mexico. Are there any questions about Mexico which you want answered?"

"Suppose you know so much about Mexico that you have no questions to ask?"

"Those who know the most about a country find most problems to consider. It was only because there has been so much in the papers about Mexico of late that I thought you might know enough to ask questions."

The children were given an opportunity to write their questions. Some showed that they were really interested in learning more about the country; but some obviously were perfunctory, and the teacher told them they sounded "like geography books."

One boy read his question:

"Is it a farming or an industrial country?"

"John, is there anything you *really* want to know?"

"Yes, there is one thing, but it is rather foolish. Why do the Mexicans have so many revolutions?"

"That is not foolish. It is Mexico's biggest problem, one that she is trying to solve."

It developed that a number of children had wondered about revolutions and the study of the country was begun with the intent to understand Mexico's difficulties.

It is true that curiosity, or the desire to investigate, is one of the inborn impulses, and we can rely upon it to stimulate interest in *initiating a project*, but we cannot be sure that the child *will remain in a questioning frame of mind* as the work progresses, even though he may continue to desire an answer to the question.

Throughout the cunning "toddler-years" the child is a questioning animal, a sort of animated interrogation point.

At first the adults who constitute his world find this entertaining and encourage these lisped inquiries. But a time comes when they become tiresome. The novelty has worn off for the adult, but not for the child. However, in time he learns that questions are frequently inexpedient, calling forth weary or sharp replies and he asks fewer and fewer questions, and in far too many cases by the time he enters school questioning is for him a lost art. The tables are turned, he is expected to answer questions asked by the teacher, many of which have little interest for him.

If the child is to become a successful student, the habit of questioning must be reëstablished. He must be made curious about the matter under consideration, must make his attack upon it with a question in mind to be answered. He must be so alert that he will know when he does not understand, not slip thoughtlessly over points which he could not explain if called upon to do so. Ineffective indeed is "he who knows not that he knows not."

Various methods are employed to help the children to discover the value of questioning themselves while studying.

They are encouraged to attempt to answer selected questions and problems from the author's list which appears at the end of each chapter in many textbooks.[3]

[3] Good lists of questions and problems are found in:
Advanced Geography, McMurry and Parkins. The Macmillan Co.
Essentials of Geography, Books I, II, Brigham and McFarlane. American Book Co.
Human Geography, Books I, II, J. Russell Smith. J. C. Winston Co.
Modern Business Geography, Huntington and Cushing. World Book Co.
Nations as Neighbors, Packard and Sinnott. The Macmillan Co.
New Geography, Frye and Atwood. Ginn and Co.
World Geography, Books I, II, McMurry and Parkins. The Macmillan Co.
America in the Making, Chadsey, Weinberg & Miller. D. C. Heath & Co.
School History of the United States, Albert Bushnell Hart. American Book Co.
A History of the United States, Thwaites & Kendall. Houghton Mifflin Co.

Sometimes all the children are asked to hand in questions which they think will make a good test of some section studied by the class. The teacher uses the best of the questions in an oral quiz.

Again, the class is divided into groups, and certain children are selected as "teachers," to review the groups on some topic. The "teachers" prepare their questions and submit them to *the* teacher for criticism before they meet their "classes."

Children can be helped to develop the technique of questioning. At the completion of a unit of study when an outline, a summary, or a diagram has been made, the teacher naturally asks a few searching questions of the "how" and "why" variety to satisfy herself that the class really understands the subject. If instead of keeping all of this fun to herself, she encourages the pupils to formulate questions, there will be more active thinking in that class all round. According to the children's individual ability the questions will be penetrating or superficial, but as a result the problem or principal under consideration will be considered in new relations. Moreover it will become a game and the children will beg, "May we ask questions next time?" This ability to ask searching questions after study is quite different from the inquiring mind turned upon a new subject.

A certain Seventh Grade group had considered a number of problems in their geography class, some assigned by the teacher, some chosen by individuals. One day the children and teacher together worked out the following general rules to be used in solving geographical problems:

1. When trying to solve a geographical problem discuss it with persons who can help you. Plan the conversation by having exact questions ready on the points needed.
2. Reconsider your problem:
   a. Have you solved it?
   b. Was your suggested solution correct?
   c. Was it workable or do you need to reword it, or hunt a new problem?

The history teacher in the Sixth and Seventh Grades encourages the children when studying independently to make note of words or statements which they cannot understand, and to hand in these notes before the recitation during which the assignment is to be discussed. If several children ask about the same point, it probably should be discussed in class.

A Seventh Grade study assignment in history included "The First Amendments to the Constitution" and "Hamilton's Plan for Establishing the Credit of the United States." [4]

A number of papers contained questions similar to the following:

"What are sovereign states?"

"Exactly what is 'funding' the debt? I have looked up the word, but still I do not understand."

"What does this mean: 'There were no express limitations in favor of personal freedom and the rights of states'?"

"I do not understand what is meant by: 'The right to assemble and petition the government.'"

The lesson was a very difficult one. The greatest gain that the children could get from studying it independently was the realization that they did not understand it. The whole matter was discussed in class.

[4] Beard and Bagley, *History of the American People*, pp. 189–195. The Macmillan Co., 1925.

Only one child asked the meaning of "Indictment by grand jury and trial by jury in all cases of persons charged by federal officers with serious crimes." "Indictment," "jury," "trial" "federal," "crimes"—all these words sounded familiar and the children did not stop to see whether they could explain the idea that they together were intended to convey. When the question was put to the class, one child after another sat down looking very sheepish after having arisen, attempted an explanation, and failed. The teacher didn't need to say anything. A child said it for her, "Seems most of us didn't know we didn't know."

Sometimes when a class has grown careless in the matter of handing in discriminating questions, the teacher "springs on them" an unpleasant surprise. She asks in a test some question which she feels sure a considerable number of children should have asked her and then gives credit, not only to children who can answer it, but to children who, recognizing that they did not understand, had made the request for an explanation. One illustration will suffice.

A Seventh Grade had studied the political campaign of 1860.[5] The next day they were given a written test, covering a few points in the lesson. In order to give the proper setting to the four questions she intended to ask, the teacher reviewed briefly the introductory paragraphs of the home assignment as follows:

> The North was stirred by the repeal of the Missouri Compromise and by the Dred Scott Decision, but it was by no means sure that a majority would vote to abolish slavery in the territories or even to disturb slavery at all. So the Republican party needed other planks for its platform in the 1860 presidential election.

[5] *Ibid.*, pp. 380–390.

Then these questions were written on the board:

1. What were the chief planks finally decided upon?
2. What is meant by the sentence, following the statement of the planks or issues—"All these issues were really dovetailed together"?
3. Who held the balance of power in this election?
4. Which planks or plank secured their vote?

"Dovetailed together," those were the words which the teacher felt might easily puzzle Seventh Graders. She explained that there might be some question about which some one of them had failed to inquire when he should have done so. In that case he was just to state the fact. On the other hand if anyone found a question which he could not answer, but about which he had handed in a question, he was to note the fact and he would be given credit for the question.

Utter astonishment on the faces of the children—

"But, Miss——"

"Oh, it's perfectly fair. You've been told always that it is more important to 'know when you don't know,' and to know how to find out about things, than it is simply to memorize facts. It will be a good thing for you to find out whether or not you have been growing careless in this respect."

By this time a number of children appreciated that the affair was half a joke, and grins began to take the place of puzzlement and disapproval. The children recognized that they had been fairly caught, and rather enjoyed the play element, but it was evident that some then and there resolved not to be caught in such a trap again.

Now as to the answers to the second question.

Five showed real comprehension.
Five showed some glimmering of the meaning.

Five children stated that they had failed to ask:

"I did not know and forgot to ask you a question about it."

"I did not understand and did not ask a question."

"I did not notice it."

"I do not believe I studied this because I do not remember anything about planks or issues."

"I do not know, I did not ask a question. I do not believe that sentence was in my book." (!)

Three children had known that they did not know, and had remembered to ask for an explanation. One of the three had not only handed in the question, but had discussed the matter with the teacher before school. This child's answer is counted among the five showing real comprehension. It is apparent that all but four children needed help, and that only three took steps to get it. Slowly, very slowly, do children acquire the habits of thoughtful students.

Of course such lessons should occur very seldom, and the children should not feel themselves being penalized. The fun must be very near the surface, or "it won't work." It is doubtful whether a Sixth Grade group could see the humor.

The children were given an opportunity to study this lesson again and to hand in questions. In this instance the teacher wrote the answers on the children's question-papers, or indicated where the answers were to be found. A few specimens are given, the teacher's comments appearing in parentheses:

Children's Papers with Teacher's Comments

First Paper

I. P. 386, middle of page
Why should the farmers of the middle west object to a tariff reduction? (p. 255.)

II. P. 388, middle of page
Why did the settlers of southern Ohio, Indiana, and Illinois oppose abolition if they did not like slavery? (Many of those settlers were from the S. and *did* like slavery.)

III. P. 390, top of page
Under what party name did the advocates of John Bell nominate him (Constitutional Union Party. Their platform stated that they stood for "The Constitution, the Union and the Enforcement of the laws." Horace Greeley said this meant "anything and nothing." Thousands voted with this party simply because they could not decide which side they were on. Consult Hart and McMaster.) [6]

SECOND PAPER

1. I never knew that Lincoln was a candidate for Senator of Illinois. I thought that the Lincoln-Douglas debates were about slavery alone. Why is it that one rarely hears of the debates as senatorial debates also? (Lincoln did not become senator, but the debates made clear his ideas in regard to slavery. The debates helped to secure his election to the presidency. An interesting account of these debates is given in *A New Nation.*) [7]
2. Page 383, bottom of page, "Although Douglas won the election, he really lost the debates." Does this mean that most of the people thought with him? (At the time a majority of the voters in Illinois thought with Douglas.)
   Was "The Great Tribute" about these debates? (I think you mean "The Perfect Tribute" by Mary Andrews. No, that is about the Gettysburg Address. We will come to it later.)
3. What was the idea about the tariff? Was it just to make trouble or did the people really think it bad? (A great many people thought it bad. A great many do *now*.)
4. Which was the Republican's first national convention? (1856. See p. 381.)
5. I have looked up the three words: "recruits," "dovetailed," and

[6] Hart, Albert Bushnell, *School History of the United States.* American Book Co.; McMaster, John Bach, *School History of the United States.* American Book Co., New York.

[7] Barstow, Charles L., *A New Nation.* Century Co., 1925.

"predominance," on page 388 near top, and still do not understand them. (I will explain.)

6. Who was the chairman of The Democratic Convention? (I do not know. Not important.)

THIRD PAPER

QUES.
PAGE 382. How did a poor slave like Scott get his case taken to the Supreme Court? Didn't somebody do it for him?
ANS. (I don't know. I will try to find out more about it.)

QUES.
PAGE 383. Lincoln-Douglas debates.
Did Lincoln have a political career before this?
ANS. (Mem. Ill. State legislature, Rep. of Ill. in U. S. House of Rep. 1847–1849.)

QUES.
PAGE 383. How did the debates come about?
ANS. (Campaign speeches. Lincoln replied to a speech in which Douglas stated that the Compromise of 1850 had repealed the Missouri Compromise. Read about the debates in *A New Nation*.) [8]

QUES. Is there a limit to the number of votes a president must have to be elected?
ANS. (He must have a majority of the electoral votes.)

QUES.
PAGE 388. What does "dovetailed" mean?
ANS. (I will explain.)

It will be noted that this child left spaces for answers. This arrangement was especially commended by the teacher, and later was adopted by several members of the class.

Sometimes an entire class period is devoted to private conferences. One after another the children are called up to discuss their questions with the teacher. Supplementary work is provided for those at their seats. In order that the

[8] *Ibid.*

work may progress rapidly the papers have been red-inked. A few illustrations are given, the words in parentheses being the ones which appeared in red ink on the original papers.[9]

One Child's Questions

1. Why was it that the Free Soil Party declined?
2. Did it do any good?
3. Did it ever get another candidate elected? (Did it ever elect a candidate? See Table of Pres.)
4. I would like to know more about the Underground Railroad. (*Building the Nation*, Gordy, Hart, Muzzey.) [10]
5. Was Calhoun from North or South? (Index.)
6. Did the agitators do as much good as this book lets them do? (Open question.)
7. I did not get the idea of the gag rule. (Confer.)

The Conference as Reported by the Teacher

John was told that so many had inquired about the Free Soil Party that it would be further discussed in class, so questions one and two were passed by.

Question 3. He turned to the Table of Presidents in the appendix. In the column headed "Party" he looked in vain for any Free Soiler. I asked him what made him think there was a Free Soil president.

"The book said Martin Van Buren was one."

"Show me where it says that," I replied.

He turned to page 380 where it is stated that Martin Van Buren was nominated by the Free Soil Party in 1848, "and obtained nearly 300,000 votes." He then realized that the book did not say that he was elected, that he had merely jumped to that conclusion.

Question 4. I suggested that when we were through conferring he might get from the reference shelf a copy of *Building the Nation* or

[9] The assignment concerned "The Abolition Movement," pages 372–380 in Beard & Bagley's History.

[10] Coffin, Charles C., *Building the Nation.* Harper and Brothers.
Gordy, Wilbur F., *A History of the United States.* Charles Scribner's Sons.
Hart, A. B., *A School History of the United States.* American Book Co.
Muzzey, D. S., *An American History.* Ginn and Co.

of one of the histories referred to and read about the Underground Railroad.

Question 5. Together we turned to the Index and under Calhoun found five page references. We looked them up and found the following statements:

p. 259, "Southern statesmen like Calhoun. . . ."
262, "In this contest John C. Calhoun of South Carolina. . . ."
277, "On the other hand Calhoun, the statesman of South Carolina. . . ."
278, "It was not until 1844 that he (President Tyler) chose Calhoun as Secretary of State and authorized him to make a treaty annexing Texas. (John knew what section of the country wanted Texas annexed.)
376, "For instance, Calhoun, Senator from South Carolina. . . ."

A series of pictures which recorded John's changes in expression as we read one reference after another would be interesting! He was also reminded that an encyclopedia might have been useful!

Question 6. We discussed this question quite thoroughly. I told John how some people thought that agitators do more harm than good, because they irritate people, that others feel that each evil should be attacked vigorously.

Question 7. I paraphrased the paragraph in which the gag rule was explained.

When children are first asked to hand in their questions most of them refer to the meaning of the text. Often children simply list a number of words which they cannot define. More and more they are thrown back on the dictionary in such cases. "Did you look it up?" A time comes when they do not ask the meaning of a word without prefacing the request with the statement, "I looked up——— but still cannot understand what is meant."

Gradually also such statements as "I do not understand

the first paragraph on page—" grow less in number as the children learn to read more carefully and voluntarily to use the dictionary, atlas, index, etc. Increasingly the papers contain requests for additional information, or for an expression of the teacher's opinion on some subject. In the case of an occasional child, the papers come to be largely an interchange of ideas between pupil and teacher. In one Seventh Grade, one pupil and her teacher often corresponded in this wise: "I think that the first four lines in our lesson were altogether prejudiced. Are they?" (Ans. "I agree with you.") Be it noted, however, that they did not always agree. The child who had independence enough to criticize the book, would not accept all the opinions of the teacher, and the teacher rejoiced, the object of teaching being to get pupils to think, not to get them to absorb the teacher's opinions.

The geography teacher reports that she handles most of the questions in class, the treatment varying according to the nature of the question. Sometimes a little help from the teacher will enable the child to answer his own question. Sometimes other pupils can give him the help he needs, or answer the question outright. Again, it may be assigned for further investigation by the child, the matter to be reported upon later. Really difficult questions must usually be answered by the teacher. They often motivate the best kind of development lessons. "Some questions are so profound that I say quite frankly that I do not know, as it is a matter for a geologist, a chemist, a bacteriologist, or some other specialist. Some questions I volunteer to investigate; some are still unsolved by science. But whatever the treatment, if we can lead pupils to word their difficulties, we have gone far in teaching them how to study."

A few typical questions from a Seventh Grade are given below with a statement of the way in which each one was handled:

1. "Why is it that the land gets warm and cold quicker than the water?"

   This required explanation by the teacher. The text stated the fact but gave no reason.

2. "If mountains are the cause of cold climate, then why shouldn't the rest of the earth, including the poles, have the same climate?"

   In this child's mind one element dominated and the other causes of climate were neglected. The teacher put this question to the class and quickly the other pupils pointed out that mountains are not the only cause of climate, and gave the other causes. The questioner saw how superficial his study had been.

3. "I do not understand why and how the trade winds are affected by the turning of the earth."

   This is a really difficult problem requiring demonstration with a blackboard globe and chalk.

4. "If the sun's rays cause the heat in the torrid zone, then why shouldn't any mountains in this zone be warmer than the rest of the land, because the mountains are nearer the sun?"

   This showed good thinking with insufficient data. The teacher gave the needed explanation.

5. "If the trade winds start from the North and South and blow toward the equator, what happens when they meet at the equator?"

   This question revealed superficial study and was soon disposed of by the class as the textbook had explained the point.

6. "Why do winds usually blow from the west after a low?"

   Here, again, was superficial study and another pupil explained this point.

7. "Is this a cyclonic storm?"

   It was a fine chance to check up on its characteristics. This led into systematic observation of the weather and keeping daily records of temperature, barometric pressure, and winds. The science teacher demonstrated and explained the making of a barometer. Some attempts at forecasting were made and the government weather reports were eagerly observed.

Consideration of these question-papers may well come to consume too much of the teacher's time. It may be necessary occasionally to look through a set very hastily, making note of and answering only the outstanding questions. Dr. McMurry sounds this note of caution very emphatically:

> It is desirable that a teacher prepare each day's lessons in full, and that she do a hundred other things each day, as well. But when she cannot do all these—and she never can—it is highly important that she apportion her time according to relative values; for instance, it is far better that she omit some of her preparation of lessons, for the sake of recreation, if recreation would otherwise be omitted. People are unfitted for the work of life until they view it in fair perspective. [11]

[11] McMurry, Frank M., *How to Study and Teaching How to Study*, p. 125, Houghton Mifflin Co., 1909.

CHAPTER II

HELPING THE CHILD TO GET FOOD FOR THOUGHT

In assigning a lesson for study, the teacher should have in mind not only the first step, the specific aim, but the succeeding steps as well. It may be that she should make suggestions in regard to them. The pupils' task is not merely to assimilate the ideas which have been suggested, but to enlarge upon them, to gather new material, to organize the same, and in the end to reach some conclusion. So, as soon as he understands clearly what he is trying to accomplish during the study period, he must proceed to the next step; namely, gathering the data necessary to the solving of his problem. Where shall he turn?

We enter a wide field in the discussion of gathering data as there are so many sources to be considered. We shall take up several of these:

I. Past experience.
II. Books.
    A. Textbooks.
    B. Supplementary reading.
III. Illustrative material.
    A. Pictures.
    B. Moving pictures.
IV. Experiments.
V. Excursions.

In preparing for this step, it is well not to suggest all possible sources, thus leaving opportunity for individual initia-

tive. The child who thinks of some source of information which has not been suggested in class experiences the thrill of discovery. His evident delight inspires others to try to do likewise. The leading citizens in any community are the persons who think out things for themselves and lead others in carrying out plans for improvement. Leaders are born and not made, but we want to be sure that we are not *unmaking* any possible leaders by stifling this spirit. Moreover, we should encourage initiative in all pupils, that the germ may be developed in each to the highest degree possible for that individual.

The need to guard against too complete preparation in the early stages of study was borne in upon one English teacher by the comment of a former pupil. The young woman sent her old teacher a copy of her first book of poems. The teacher sent the young author a copy of a charming verse which she had written years before as a little Fourth Grade girl. The poet replied, "I remember the occasion of the hepatica poem distinctly, even to the feeling that you were helping us so well that I would have none of the creator's joy!"

I. GATHERING DATA FROM PAST EXPERIENCE

Before the student makes use of any of the outside sources listed above, he should turn to his own mind, that he may draw upon his reservoir of concepts and images, his "apperceptive mass." This step is sometimes taken with the children during the assignment of the lesson. As was stated above, "Often, before beginning an assignment, we discuss what we *already know* about the subject and what we should like to find out."[1]

Certain it is, however, that very many high school and

[1] P. 15.

college students have not formed the *habit* of devoting time to a *conscious* searching of their own experience *before* they turn to some outside source of information, and we elementary teachers are to blame. We have not trained the children to such conscious use of their own resources.

Not only before beginning to gather data from an outside source, but frequently during that process, the student may supplement by recalling information previously acquired.

Such supplementing is especially important in the case of textbooks. Even the best texts, because of limited space, state many facts so briefly that they mean little to a child. Often he can better the situation by filling in details. The history lesson which follows illustrates how this can be done.

The class was considering the Settlement of America. A section in the textbook is headed, "Difficulties and Dangers of Settlement," and under this heading are two subheads: 1. "The Dangers of the Voyage," and 2. "Indians." [2]

The children were directed to read this heading and the two subheads, then to close their books and each to make a mental list of the points which he would group under each of these subheads. Several lists were given and discussed before the children read what the authors had to say. They found that they already knew almost all that the authors had to tell, which was a joyful discovery. It was pointed out that they had benefited by reviewing the information in this systematic manner, that they were beginning to understand better what it meant to found colonies in America; and to get better acquainted with men and women who laid the foundations of our national life.

[2] Beard and Bagley, *History of the American People*, pp. 38–41. The Macmillan Co., 1919.

Then the children were asked whether they could think of any dangers or difficulties which the authors had omitted to mention. Hands went up all over the room, but the teacher said, "Don't tell me now. Do it during the study period."

It was decided that the book covered the voyage pretty thoroughly, but that the Indians were by no means responsible for all the difficulties which faced the colonists on land. The work assigned for the study period was to make an outline of the points given on pages 38–41, and to add other points under a subheading—" Dangers on Land," the "Indians" to come as one point under this heading.

Among the points noted were:

Difficulty of securing food.
Cold winters.
Forests to be cut down.
Not enough tools to work with.
Disease.
Bad doctors.
Homesickness.

Some children stated four or five details, others only one or two, a very few none at all.

There must be many, many exercises demanding this type of introspection before the *habit* will be established. History textbooks abound in instances of such brief, lifeless statements which must somehow or other be vitalized in order that they may serve to develop in the children a sympathetic understanding of the struggles of humanity in its endeavor to reach a higher plane—the greatest good resulting from the study of history. In many instances the children, by recalling related images which will come to the foreground if they take time to reflect, can greatly enrich the meager statements.

Even the best books often slur details, sometimes to such an extent that outside sources must be consulted before the situation is sufficiently clear to suggest any relation to others previously known. Consider, for instance, the following passage from one of the best concerning the founding of Rhode Island: [3]

Although the Puritans had suffered much from religious persecution in England, they were unwilling to tolerate in their own midst people who did not agree with them in religious matters. For many years any new sect that appeared in Massachusetts was badly treated, and its members were driven into the inland wildernesses.

In 1636, Roger Williams, who had been preaching at Salem doctrines which were displeasing to the Puritans, was banished from Massachusetts. With a little group of followers, he went south and laid out the town of Providence. Other settlements, including one in Rhode Island, soon followed. Seven years later, in 1643, the inhabitants of this new community were able to get from the English Parliament a charter forming them into an independent colony, Providence Plantations. Twenty years later Charles II granted Rhode Island and Providence a new charter which was kept as a constitution until 1843.

This account leaves most children quite cold, with no appreciation of the courage required and the hardships endured for the sake of an ideal.

Let us see what happened when the class was started to imagining what this journey must have been like. The children discussed the situation:

"We must find out how long a distance Williams traveled and then we can estimate how long it took him."

"We need to know whether or not he had to cross rivers."

"He had to go most of the way through the forests, and . . ."

"Unless he took a boat . . ."

"That wouldn't have been likely. Where'd he have gotten his

[3] *Ibid.*, p. 54.

boat?" chimed in another. "Any way it says,—'driven out into the inland wildernesses.'"

"The way the Indians felt toward him would make a lot of difference. Were they friendly?"

The children were beginning to get interested in Roger Williams. He was becoming a personality, not merely a name to be memorized with a fact and a date attached. But they had found that they knew too little to follow his journeyings. Obviously they must gather more data from some other source before they could imagine that journey.

They turned to reference books. In *Thwaites and Kendall*,[4] they found that one of the "doctrines displeasing to the Puritans" was Williams's belief that "the king had no right to make grants of land in America, for it really belonged to the Indians." Heads nodded—

"The Indians would be friendly."

They gained another fact—"He escaped in the bitter cold and deep snow of mid-winter, to seek refuge in an Indian hut on the shores of Narragansett Bay."

From *Bourne and Benton*[5] they gleaned the following:

He had often visited the Indians, could speak their language, and was looked upon by them as a friend. The Indians gave him a hearty welcome, took him into their wigwams and shared their scanty supplies of food with him. In the spring a few followers from Salem joined him and together they marked out the site for a new settlement beyond the territories of either Massachusetts Bay or Plymouth. They called it Providence, believing that a good Providence had guided them to so excellent a location. Roger Williams paid the Indians $150 for the land, which seemed to the Indians a great sum.

[4] Thwaites and Kendall, *A History of the United States*, pp. 85–86. Houghton Mifflin Co., 1924.

[5] Bourne and Benton, *History of the United States*, pp. 63–64. D. C. Heath and Co., 1925.

The map showed them that from Salem to Providence is sixty miles "as the crow flies," but of course he could not go in a straight line, and there *were* rivers to be crossed.

By that time the children were ready to reflect, each for himself calling up the images that would make vivid to him the days of tramping through the snow-choked forests, the nights spent, perhaps, under the shelter of low-spreading trees; the joy of coming upon an Indian encampment, etc.

Though many of the details were not strictly accurate, the children now had some comprehension of the character of the man and the kind of hardships he must have endured. And even if they should never read more about Roger Williams, they had learned one of the great truths which his story should teach them; namely, that one must often suffer for an ideal.

But they would be glad to read more about this man whom they had come first to pity and then to respect. If the teacher could produce an interesting book about Roger Williams, it would not lack for readers.[6] The children would be glad to learn that Williams went to England and obtained for Providence, Portsmouth, and Newport the right to rule themselves, and delighted to find that in the colony started by him, religious toleration was the rule. And they would be likely to remember these facts better than if they had begun by reading rather than by attempting to imagine the experiences, calling up the pictures from the stock in their own minds.

We have been talking of this process as "gathering data." So it is;—we might from another angle characterize it as "application of knowledge."

[6] The story is well told in *American Leaders and Heroes*, by Wilbur F. Gordy, Charles Scribner's Sons; and in *Heroes and Founders of America*, by Anna E. Foote & Avery W. Skinner. American Book Company.

In books on methods of teaching, emphasis is laid upon the necessity of relating the new to the old, and most teachers in elementary schools attempt to do this in development lessons, but many, perhaps most, fail to train their pupils *consciously* to take this step when they are studying *independently*. It might seem that the children would unconsciously imitate the teacher's method, but few do. It is easier to read what someone else has thought out than to do one's own thinking, and we all are prone to follow the line of least resistance.

This failure to realize that the last step in the study of one unit may form the first step in the study of another related unit causes much wastage; here a useful bit of knowledge in an air-tight compartment; there another; no path between; just so many remembered facts which do not function.

This suggests the possibility of one unfortunate result from the drill in silent reading which has been so enthusiastically recommended. Under the caption "Concentration of Attention," Dr. O'Brien states that "Much of the time consumed in apparent reading is, in reality, lost through unconscious wanderings of the attention and fruitless daydreaming. The eyes often remain fixed upon the page while the mind is visiting distant climes and is busy 'building castles in Spain.'" [7]

We have there the picture of a reader allowing his thoughts to drift, undirected and unchecked, from association to association. The result is that he not only reads slowly but inaccurately. "Rapid readers not only averaged approximately 37 per cent superiority in the quality of their work, but also introduced less extraneous matter in their reproduction." [8]

[7] O'Brien, John A., *Silent Reading*, p. 63. The Macmillan Co., 1921.
[8] *Ibid.*, p. 64.

But in studying the aim is not simply to gain an accurate idea of the author's thought and reproduce the same, but to weigh that thought, to appropriate or reject it according as it does or does not fit in with the purpose of the study. This takes time. So we have before us the double task: we must train the children first to read rapidly in order to get at the thought of the author free from extraneous matter, and then to stop and reflect upon that thought, question it, supplement it, assimilate it.

II. GATHERING DATA FROM BOOKS

A. Textbooks

Some textbooks seem especially designed to thwart the pupil in his efforts to study intelligently, but there is no dearth of excellent books, and it is most important that only such texts should be placed in the hands of the young student.

In the second place, it is important that the teacher should be allowed to choose from among a number of suitable books, the one which she would prefer to use. If forced to use a book which does not satisfy her, she will be handicapped in her teaching.

Assuming then a good textbook, reliable, unbiased, sufficiently full to be interesting, well arranged, well indexed, with adequate reviews, well-worded questions, and good illustrations; assuming the teacher to be satisfied with the book, let us consider how it is to be used. Not necessarily, not usually, by beginning at page one and going through to the end. More often the children are assigned, or select for themselves, a certain topic to master or problem to solve. The author's arrangement should never be allowed to be a handicap in the use of the book.

The method employed in gathering data from the textbook will be determined in any given instance by the angle from which the group is approaching the topic under consideration, and by the character of the students, their mentality, their maturity, the amount of instruction they have had in methods of study, etc. A few illustrations of methods used are given below:

A Fifth Grade had just finished the study of Switzerland and were beginning the study of Austria. They were told that they were to have a chance to find out a number of things for themselves. Some questions were written on the board to guide them in gathering data. The answers were to be written by the pupils.

The four questions given below could not all be answered in one forty-minute period:

1. How is Austria like Switzerland?
2. Arrange the industries and products of Austria in two columns as we did for Switzerland. Name any city noted for a product.
3. From your list tell how Austria differs from Switzerland in its industries.
4. Find all the countries which formerly were part of the Austro-Hungarian Empire. List these and be able to locate them.

Question 2, above, was given to follow up a lesson in which the class helped to classify the products of Switzerland under the proper industries.

The answers to such questions are sometimes collected so that the teacher may check up the ability of the pupils to get information from the printed page. Sometimes the answers are discussed and checked in class.[9]

[9] In the three Barrows-Parker geographies (Silver, Burdett and Co.), each region is preceded by careful directions for reading so that the pupil studies under the guidance of three or four large questions. *Journeys in Distant Lands*, 1924; *The United States and Canada*, 1925; *Europe and Asia*, 1927.

Under the heading, "Questioning Attitude of Mind," mention was made of a class studying Mexico with the question in mind, "Why does Mexico have so many revolutions?" The work proceeded as follows:

A tentative list of possible causes of the Mexican revolution was written on the board to be checked up after study. The first source consulted was the textbook.[10] The pupils turned quickly to the general subject "Mexico." It was not necessary to read all the author gives to find material to help solve this problem, for the book has paragraph headings which indicate the contents. Pupils were not permitted to give irrelevant information just because the facts were given in the book. The authors did not have just our problem in mind.

For several years our Sixth Grade used the *History of the American People* by Beard and Bagley, The 1919 edition begins with a chapter on "European Beginnings of American History." For our Sixth Grade this is largely review. Several periods were devoted to oral review of life in the Middle Ages before the new book was put into the children's hands. At least one lesson was devoted to getting acquainted with the general scheme of the book, and the aids to its use.[11] Then came the day when the children began proudly to study the new book.

As with all the chapters of this book, the first few paragraphs of the first chapter constitute an introduction, a sort of prelude, which makes clear the aim of the chapter, and creates the proper atmosphere. Usually the teacher reads these aloud with but little comment.

On page 4 is a black-typed heading, "Why the American

[10] McMurry and Parkins, *Advanced Geography* (The Macmillan Co., 1925) was used in this class.

[11] See chapter on Mastery of Certain Common Tools, pp. 222–229.

Explorers and Colonists Came From Western Europe." With one group, as soon as that had been read the children were directed to close their books, and to think out as many reasons as they could. Then they were told to turn to the map of "Europe in the Middle of the Sixteenth Century," to see whether from it they could find any other reasons.

After several children had stated all the reasons they had found, both by reflection on past knowledge, and by study of the map, the class read the paragraphs in the book. They were told to see how many of the points already discussed were given by the book, and what new points were given in addition to those.

The second division of the chapter has to do with the "Life of the People in Europe," a subject to which much time is given in the Fifth Grade. The children were expected to study this quite independently, making mental notes of the points brought out by the authors.[12] The notes were given and discussed in class. Later on, each child handed in a set of written notes.

The Seventh Grade uses the same textbook. One group when studying the "Monroe Doctrine" on page 242 (page 229, 1925 Edition) brought up the question of the Spanish-American War, desiring to know "whether the Monroe Doctrine had anything to do with it," so we turned to pages 544–551 (pages 550–554, 1925 Edition) and studied the war quite out of its chronological order.

In this study, as with the study of all wars, we made no attempt at thoroughness in regard to the events of the war. A knowledge of causes and results will be of more value to the citizen of tomorrow in his efforts to work against war.

[12] They had had several lessons on note-taking. See Chapter III.

II. GATHERING DATA FROM BOOKS

B. Supplementary Reading

So much attention has been given of late to the matter of supplementary reading that it seems unnecessary to devote much space to it here. Surely we can say with Solomon, "Of making many books there is no end." The danger is that children will read too much rather than too little.

If simply told to read more about a given topic, the child is likely to take the first book that he can lay his hands upon which seems to bear upon the subject and proceed to read it from cover to cover. The trained adult student tries to secure a book by some authority on the subject under consideration. Then he consults the table of contents and index and reads only such portions of the book as are of value for his particular purpose. He may read several books in this selective manner making notes and comparing the ideas of the different authors. And this should be the procedure of the child student as well.[13]

Since elementary children seldom are able to judge of the qualifications of different authors, they must be directed to the right sources. Once they have learned that a particular author is unreliable, they should avoid him, and *vice versa*, choose the works of writers who have been proved to be trustworthy. In the early years the important thing is for them to learn that not all that is in print is to be relied upon.

The following statement shows how one teacher guides the children in the matter of outside reading.

Many library books are selected with a view to their expanding geographical knowledge in story form, or with

[13] The matter of note-taking is discussed under "Note-Taking and Outlining," pp. 67–85.

more interest than textbook space permits. When a region or an industry is being studied, the teacher selects a book that deals with the topic and reads a page or two aloud to the class. "Who wants to read this book?" is responded to by many hands, and then and there it starts in circulation. So with articles taken from the *National Geographical Magazine*, the *Geographical News Bulletin*, and other sources, some being loaned by the pupils. Large manila envelopes are used to protect them. Pupils are encouraged to volunteer to do supplementary reading by such statements as, "This will help you to understand the Northlands" [14] or, "This is a good story of New England fishermen," [15] or "Here are harvest scenes." [16] Recently in the Sixth Grade, every child had some supplementary reading and it required a special librarian to check up the books. One book was read by every member of the class, the others by 90% of the class or less. None of this was compulsory.

Much the same method is used by the history teachers.

The ideal book supplementary to the arithmetic text has not been written. If arithmetic is to help the child to interpret life in its numerical aspects, there should be available masses of numerical data of vital import ready to be drawn upon with less waste of time and effort than at present. The best problems with practical content found in the

[14] Stefansson and Irwan, *Kak*. The Macmillan Co., 1925.
Stefansson and Schwartz, *Northward Ho*. The Macmillan Co., 1925.
Grenfell, W. T., *Adrift on an Icepan*. Houghton Mifflin Co., 1914.
Muir, John, *Stickeen*. Houghton Mifflin Co., 1914.
Gilman, Isabel, *Alaska, the American Northland*. (Inter-American Readers.) The World Book Co., 1922.
Putnam, David Binney, *David Goes to Greenland*. G. P. Putnam's Sons, 1926. And many more.

[15] Kipling, *Captains Courageous*, Doubleday, Page and Co., 1896.

[16] *Harvest Scenes of the World* published by International Harvester Company of America.

best modern textbooks are still set problems external to the child and not inspired by his desire for the solution. There should be frequent opportunities to construct and solve problems from live data in the world of affairs. Such data can be obtained, with considerable assistance by the teacher, from the appendix to the geography text, from the Stock Exchange and Real Estate columns of the daily papers, from many magazine articles, preëminently from the *World Almanac*, and from various incidental sources. Data for the parcel post and express problems described on pages 134–135 were obtained from official tables. The mathematics teacher who wishes to make her subject genuinely educative must be ever on the alert for opportunities to introduce her children to useful numerical situations.

III. GATHERING DATA FROM ILLUSTRATIVE MATERIAL

A. Picture Study

The very fact that the books of today are so profusely illustrated tends to blunt the children's perceptions. Where there are so many pictures little attention is paid to any one. The child gets into the habit of glancing at a picture hurriedly, experiencing a momentary sense of pleasure, and passing on to the next without having learned anything definite from the first one. Movies have been called, "the drug habit of the mind." To a certain extent, much of the illustrative material put before the modern child is open to the same condemnation unless the child is taught how to study it. As one teacher puts it, "Pupils seem really immune to the education in pictures. In contrast to our grandparents who paused over every chance picture they could find, the modern child is so surfeited that in sheer

self-defense he barely glances at those placed before him without definite purpose. He must be trained in their use."

Furthermore, those who are familiar with the Binet scale will remember that it is only on the 12-year level that children can be expected to explain or interpret pictures. Earlier than this enumeration or description is the rule. For example, consider for a moment the credited interpretations of one of the standard pictures in the Terman revision of the Binet scale.

"Child has spilled something and is getting a scolding," or "The baby has hurt herself and the mother is comforting her," or "The little girl has been naughty and is about to be punished."

Now even in a group of 10–14 year old children with median I. Q. 120, a not inconsiderable number do not pass this particular test but give descriptive replies like the following:—

"It is a Dutch home. I know because there is a windmill outside, and the people are dressed that way."

"It's in Holland and the little girl is crying and her mother is looking at her."

If such replies come spontaneously in an intelligence test, it is clear that before pictures can be assumed to be practical sources of data, there must be conscious and definite training in searching for the significance of illustrative pictures. This matter is attacked from various angles.

In one class, a series of questions concerning pictures in the texts revealed to the children themselves the fact that they really knew nothing about them. Then the question was asked, "How is a picture like a paragraph?" These were children who had had the work in analyzing para-

graphs, an account of which will be found under "Organization of Data," and the answer came promptly, "A picture may show many things but we must study it to find out the one thing it has to teach us." This one thing may be the size of a sequoia, cutting grain with a cradle, how candles were dipped, the arrangement of seats in the Senate Chamber, or what not. There is some one fact or process or principle to be observed.

This point established, it might be well to hold each child responsible for making clear to his classmates the important point in one picture relevant to some subject which had recently interested the class.

One way of studying pictures is by the "pupil-lecturer" method. One child in every five or six is selected to study certain pictures in advance. This is done under supervision. Then he lectures to his small group, making each picture tell its story. When he has finished, the group moves on to another "lecturer," and a new group comes to him. So it continues until each group has seen all the pictures. Thus are studied pictures of the fishing industry, lumbering, iron smelting, the evolution of harvesting, life in the old Spanish Missions, the home industries of the colonists, etc. These child lecturers study their pictures very earnestly, asking the teacher to explain points which many observers would pass over entirely. If during the year each child is given a number of opportunities to lecture, something will be accomplished toward fixing the habit of careful observation of illustrative material.

It is well that the teacher should occasionally be one of the lecturers. The children feel her greater power and may gain through imitation of her methods.

An excellent way of inducing careful study of a picture is

to have the children write a title for it.[17] A lesson typical of this procedure is taken from a study of lumbering.

Lumbering, as it is carried on in New England, was explained and illustrated by pictures. Then the class read about lumbering elsewhere in the United States and pictures were exhibited which supplemented the text. The pupils took paper and pencil and wrote titles for the pictures, each picture being numbered for the purpose. There were titles printed under some of the pictures, and in some cases explanatory paragraphs as well. In these cases, the children were to select better titles if possible. When there were two pictures of the same thing they were to try to indicate by their titles why each was shown. When finished, the pupils read their titles and discussed the pictures, having the best titles checked.

If anyone needs to be convinced that a picture does not always teach itself, the following errors may be convincing:

1. A donkey engine with a horse standing by ready to pull the cable to the distant log which was to be hauled in by the engine. An explanation was beneath the picture.

One child gave this title,

"Carting logs with donkeys."

Another wrote,

"Horses draw logs."

Among the correct titles were,

"Moving logs with donkey engines."
"Logs being moved by cable."
"How people move logs out of forests by means of donkey engines."

[17] In the Barrows-Parker geographies (Silver, Burdett and Co.) picture study is made a definite part of the instruction. The illustrations are unnamed and the child's interest is skillfully led now to the pictures, now to reading—each incomplete without the other.

2. A fallen sequoia with carriage and horses standing on the huge tree trunk.

Errors:

"Teams of horses pulling logs."
"Lumber pulled by horses."
"Wagons of people going to lumber camp."
"Scene in a forest, a carriage in a tree."

Among the correct titles were:

"Compares carriage with fallen tree."
"Showing size of trees."
"Shows comparison between tree and cart with horses."
"Compares horses and men to fallen tree to show size."
"Horses and wagon able to stand on a big tree."

After these titles were compared and discussed no child still thought that a "big tree" is pulled by horses. In fact apologies were offered for the foolish answers which showed that these few failed to think at all.

III. GATHERING DATA FROM ILLUSTRATIVE MATERIAL

B. Moving Pictures

While it is true that "movies" may, and often do act as mental narcotics, they may be of educational value if looked at alertly and with an end in view. Apparently they have come to stay, and it is important that this generation of children should learn how to profit from them.

It has been clearly shown that children often miss the point of a "still" picture when they have plenty of time to examine it. How much more often will this be the case when the picture flies by rapidly, and there is no chance for a second look.

It is important that in the children's minds there shall be some basis for understanding each film. Most films are shown as reviews rather than as introductions to new material. For example, industrial films are generally complex, and even when a process is shown clearly, it is too fleeting for many of the children to understand. But if the children have already studied pictures and diagrams of the process, they may get a great deal from seeing the mechanism in action.

If possible, the teacher should have seen the film before it is shown to the children. She is then prepared to offer a word of explanation, answer a question, point out a detail, and so insure more complete understanding. It is most important that the children should be in a questioning frame of mind throughout, or they will be harmed rather than benefited.

But even when there has been careful preparation before a film is shown, and when the teacher is able to answer brief questions as the picture passes before them, there is frequently need of discussion when the children return to the classroom. Consider, for instance, "The Story of Coal." A class may have studied coal mining, but there are likely to be some differences between the process as demonstrated on the screen and as described in their books. The children are eager to discuss these differences. Some are only apparent and can be reconciled. Others bring out varying methods in different localities. Probably some children have misunderstood certain points and need to be set right.

Sometimes films used to review or illustrate one point contain also matter which is foreign to the subject as it has been developed in the classroom. It is especially important that the children be allowed to ask questions after

seeing such a picture. For example, the film "Beyond the Microscope" was shown after making oxygen and hydrogen in the classroom. This picture shows the decomposition of water into oxygen and hydrogen and how hydrogen burns and oxygen supports combustion. Animated drawings show the structure of the atoms which make up hydrogen and oxygen, and how these atoms combine to form water. The action of nuclei, electrons, ions, etc., is represented. Water is made by exploding oxygen and hydrogen by passing through them an electric spark. Also there is shown the effect of heat on the activity of molecules and how molecules act when frozen or formed into snowflakes.

The class had greatly enjoyed the classroom demonstration, and they enjoyed and appreciated the pictured process of forming water from the gases and the action of heat and cold on molecules. But the diagrammatic representation and the animated drawings were very confusing to Seventh Grade pupils. Their first reaction was that they did not understand the picture. However, as the teacher discussed the film with them, she readily found what had confused them and was able to clear away the difficulties, thus making the whole experience an instructive one.

IV. GATHERING DATA FROM EXPERIMENTS

When one speaks of gathering scientific data, perhaps most adult students think first of the process by means of laboratory experiments. For the most part, elementary children are too ignorant of technique and of research methods to plan many profitable experiments. Most of the so-called experiments for these grades are rather in the nature of demonstration lessons, whereby the teacher explains a principle or illustrates a process already studied,

or about to be studied, *e. g.*, models of water wheels, or canal locks, or evaporation of water.

In some cases, however, it can be arranged for a class to observe and draw conclusions for themselves. One Seventh Grade observed a series of experiments leading up to a discussion of atmospheric pressure and its effect upon our lives.

In the first lesson without any introduction, the class was shown a bottle full of water fitted with a one-holed stopper with a glass tube through it. They were asked whether any one could draw the water out of the bottle. Many pupils were sure that they could and the class chose one to try. Chagrined at his inability to suck any water up the tube, the child tried and tried until he looked as though he might burst. When the class was asked what could be done to get the water out of the bottle, someone said, "Well, I suppose he could try harder." This did not seem possible!

As they could not figure out what was the trouble and how they could get the water out, the teacher went on to another experiment. A small amount of water was boiled in a tin can, which was then quickly covered with a tight lid, and chilled by having cold water poured over it. The tin crumpled up like paper. One or two pupils looked as if they began to see the cause, but the teacher passed rapidly on.

This time a tumbler full of water was taken, covered with paper and inverted. The paper remained in place and the water did not run out. This experiment was more familiar, having been tried at home by some children. There were a few whispers of atmospheric pressure and someone suggested that if the stopper in the first bottle were loosened the water could be drawn out.

The more illustrations, the better the point sticks, so

another experiment was performed. Three bottles were used. The first was corked with a one-holed stopper and had a candle in the bottom. The second had a two-holed stopper and was empty. The third had no stopper and was filled with water. The bottles were connected with glass tubes. The candle in bottle one was lighted and the stopper replaced. The candle burned low and soon went out. Then the water from the third jar ran into the second. After considerable discussion as to whether the candle sucked the water in or the air on the surface of the water forced it in, the class decided that the candle went out only because it had used up most of the oxygen in bottles one and two. That left a partial vacuum in the bottles so the pressure of the air on the surface of the water pushed the water over into bottle two until the air pressure was balanced.

These experiments show how children may be exposed to a large amount of data which they may later be helped to organize and from which generalizations may be drawn. When a textbook is employed, its effective use is similar to that of geography and history texts elsewhere enlarged upon.[18]

V. GATHERING DATA ON EXCURSIONS

The publishers furnish us with pictures galore, the film companies bombard us with advertisements of educational movies; but it is left to the teacher to plan her own excursions. Now an excursion may be a most valuable experience, adding greatly to the knowledge of the subject under consideration; or the children may fail to gain any-

[18] For children who wish to devote their free periods to scientific experiments and study, perhaps nothing is more convenient and comprehensive than Carleton W. Washburne's *Common Science*, World Book Co., 1925.

thing definite, and come back bored or blasé, with an idea that they have learned a great deal, when in reality they have acquired only a blur of undigested impressions. As in the case of moving pictures, it depends largely upon how the children are prepared to meet the experience. The preparation varies with the type of excursion, but in general it is safe to say that before they go, they should have some very clear ideas concerning the objects or processes to be observed, or there is little chance of their gathering new data during the trip. It is always a most unfortunate circumstance if the teacher has not had a preliminary view of what the children are to see.

It has seemed to us that most trips to museums and some to industrial plants are best handled by the "pupil-lecturer" method. This involves a preliminary excursion when the teacher and the pupil-lecturers go over the ground together, the children observing and taking notes, each on the material for which he is to be responsible. During the days which intervene between this trip and the class excursion, the lecturers write up their notes. If there is suitable printed material available, they are encouraged to read it and incorporate whatever will enrich their lectures. So much for the preparation made by the lecturers, and it is usually very thorough. The children do real studying, collecting, and organizing data with the very definite aim of presenting it clearly to their classmates. But the audience also must be prepared. Sometimes the regular class exercises suffice. Again the teacher gives a preliminary talk a day or two before the excursion takes place, or each lecturer gives a classroom lecture, presenting as much of the material as can be made clear apart from the objects to be observed.

Sometimes it is not desirable or possible for children to conduct the excursion.

If the purpose of the trip is to observe some complicated process as, for example, the work of the weather bureau, or the manufacture of steel, the explanations should be given by experts. Moreover, it would not be reasonable to expect these people to allow two visits for the benefit of one group of children. Such excursions come as the culmination of careful classroom study, so that the children have in mind definite points to be observed.

If the trip involves considerable expense, it is not right to ask that any of the children pay this twice. A case in point is a boat trip around Manhattan Island costing seventy-five cents apiece for children. A series of questions discussed in the classroom starts the children off prepared to profit by what they see on such a trip.

The questions used with one class are given below. In this case, the excursion came as a preparatory step in the study of the city, not as the culmination of a series of lessons. The children were told that they were about to make a special study of their own city, New York:

Teacher. What is the chief fact about New York City?
Pupil. It is one of the very largest cities in the world.
Teacher. How large?

The children consulted their geographies to find the answer to this question.

Teacher. Does the huge number suggest any questions to you?

Questions followed in rapid succession. They were listed, but not answered at the time. Occasionally, the teacher added to a question—see questions 2 and 5.

1. How many of the people are foreign and how many are American?
2. How do we get food, clothing, hardware, furniture, books, trains, autos, gas, and coal to the city? (The teacher added, "and water?")
3. How does New York dispose of ashes, garbage, rubbish, sewage?
4. How does the city protect us from disease, whiskey, and drugs, thieves, fires, impure food, danger from traffic, from overcrowding?
5. How are playgrounds provided? (The teacher added "and schools?")
6. Why has New York grown to be such a large city?

The children were then told that the answers to some of their questions would be found in their books, and the answers to others they would learn on an excursion, a boat trip around the city. After the route of the trip had been outlined, they were set to work to prepare themselves to profit by the experience. They were told to read in their geographies the section on New York City, and as they read to try to find the answer to question 6 above, "Why has New York grown to be such a large city?" listing all the reasons they discovered. They were directed to make a second list consisting of all the things they should be on the lookout for on the trip around the city.

There is a lecturer on board the boat, so there is little opportunity for discussion during the trip, but there is much to talk over in the classroom afterward.

It is apparent from the foregoing statements that even with elementary children it may take considerable time to get together sufficient data to justify forming a conclusion and some pupils will weary of the task. The "wise teacher" must devise means of encouraging them to persevere, and must guard against their jumping at conclusions. Eager impetuosity as well as lack of perseverance may lead

children to form judgments too hastily. Indeed, there is nothing harder than to induce people, young or old, to wait until all the evidence is in before coming to a conclusion on a given subject.

A hastily formed opinion should be challenged. "Can you prove it?" "Has anyone come across anything which seems to contradict this statement?" "Have you read *all* the references?" Some such questions help to encourage a more reflective attitude.

The children are influenced in this respect by the teacher's method in development lessons. If she is in the habit of considering different points of view and weighing evidence, they will catch something of her spirit and may apply her methods when working independently.

CHAPTER III

HELPING THE CHILD TO ORGANIZE HIS FACTS

To draw a line between gathering and organizing data is somewhat misleading. Whenever possible, facts should be pigeonholed as they come in. To accumulate a miscellaneous mass of material which must later be sorted is uneconomical and leads to confusion. The student is lost in a maze of details; as the saying is, "He cannot see the forest for the trees." Therefore, throughout the grades and in all subjects much attention is paid to orderly methods of gathering data and recording the findings.

With the little children the record is apt to be in the form of a collection of natural objects or of pictures. Again, the teacher may record facts on the blackboard, or the children may write brief statements or little compositions and bind them together.

But, as has been indicated above, a mere record is not all that is necessary, there must be some definite method of recording, some grouping or arranging in order that the new concept toward which we are working shall at last emerge. "It is a natural process for ideas to become associated in groups, but in purposive thinking this process must be consciously aided." [1]

This grouping may consist of arranging facts in a series because of resemblance, in two lists to emphasize contrast, or in chronological order to bring out the idea of

[1] Earhart, Lida B., *Teaching Children to Study*, pp. 37–38. Houghton Mifflin Co., 1909.

the lapse of time. The relationship may be that of cause and effect. We can think of a product map as an organization of data. Such also would be a sketch of some character in history, naming on the one hand his good points, on the other his weaknesses. Topical outlines and notes have been referred to several times as methods of organization used during the process of gathering data.

In whatever method we may employ we must be mindful that facts vary greatly in value, and that the consideration of relative values is of prime importance. Dr. McMurry, in his chapter on "The Organization of Ideas," paints a dreary picture of the result when this inequality is disregarded:

> So long as facts are treated as approximately equal in worth the learner is bound to picture the field of knowledge as a comparatively level plain composed of a vast aggregation of independent bits. In spelling, writing, and beginning reading, it is so many hundreds or thousands of words; in beginning arithmetic it is the various combinations in the four fundamental operations; in geography it is a long list of statements; in history it is an endless lot of facts as they happen to come on the page; in literature it is sentence after sentence.
>
> One can get possession of this field, not by taking the strategic positions,—for under the assumption of equality there are none,—but rather by advancing over it slowly, mastering one bit at a time.

This he calls "the method of study by driblets," condemning it especially because it fails to take into account that:

1. Facts, as a rule, vary greatly in value.
2. They are dependent upon one another for their worth.
3. The sum of the details does not equal the whole—the larger thoughts, instead of being the sum of the details, are an outgrowth from them, an interpretation of them; they are separate, new ideas conceived through insight into the relations that the individual statements bear to one another.[2]

[2] McMurry, Frank M., *How to Study and Teaching How to Study*, pp. 87–92. Houghton Mifflin Co., 1909.

The task of the elementary teacher then, is to train the child to analyze data, to pick out important points, grouping under each the details which belong with it, to eliminate irrelevant material, and finally to arrange the whole according to some pattern that will bring out the essence of the matter.

Let us consider some of the things which can be done to train children to evaluate facts and to see the relationships between them.

GETTING THE IMPORTANT THOUGHT OF A PARAGRAPH

The children in the Fifth Grade are given some exercises in analyzing paragraphs and stating their main points to overcome their tendency to attempt to memorize a mass of details. In making reports to their class, pupils sometimes copy the material from the reference book verbatim. When this is shown to be a useless procedure, the next report is often just as long, being merely the reproduction of the passage in the pupil's own words. Since pupils do not know how to extract the main ideas; they need help in consciously attacking the difficulty.

A first lesson is given here. It took about forty minutes. The paragraphs were read by the teacher in order that no one should be hindered by slow reading habits:

Mother Salmon is a fish, that lives most of her time in the salt sea, but she always lays her eggs in icy-cold fresh water, in a place far from the sea. In the summer time it is hard to find such a place out of doors, but Mother Salmon knows where to look. There is icy-cold fresh water in little lakes high up in the mountains, where streams flow down from melting snows and glaciers. Sometimes these lakes are a thousand miles from the sea, so it is a long, hard journey, a thousand miles up the river, to the little ice-cold lake in

the mountains. But that is where Mother Salmon has to go to raise her babies. [3]

Teacher: Who can give the real meaning of that paragraph? What were the main ideas told?

Anyone familiar with the Binet test knows that there are three very common types of errors in response to the 10-year reading test. Here the child is asked to tell all he can remember that he has read and a verbatim reproduction would be perfect. But those not successful fail: first, by giving only a few phrases at the beginning; second, by repeating the last sentence; third, by embroidering the whole with statements not included in the original paragraph.

Now when, as in the present instance, it is the essential idea which is called for, the errors follow the same general line with the additional error of complete reproduction. Thus certain volunteers gave as the gist of the paragraph that,

"Mother Salmon lives way up in the salt sea." Or that,
"The ice-cold lake in the mountains is where the mother salmon has to go to raise her babies."

A few proudly undertook to repeat the paragraph complete, while one boy, and a very bright boy at that, after an almost perfect reproduction continued:

"Then she goes away and she knows when to come back. She comes back and the eggs are hatched and a lot of little salmon. She takes them with her to the sea and that's how salmon are born."

Two or three really good sentences were given, the following being accepted as the best:

[3] These paragraphs were read from *Human Geography*, Book I, by J. Russell Smith, pp. 100–101, J. C. Winslow Co., 1925.

"The salmon lives most of its life in the salt sea, but it goes to a cold mountain lake to lay its eggs."

The teacher read the next paragraph:

In the summer a great number (school we say) of big, fat salmon swim from the Pacific Ocean up into every river on the coast, from San Francisco to the Arctic Ocean. In our river they swim around a certain island near its mouth, and two miles up it they cross over to the other side, as carefully as a man driving a wagon would follow that path. Upstream they go—on and on. They swim through rapids. They jump up waterfalls. Sometimes they fall back and are cut by rocks. Some are killed. White men catch them; Indians catch them; bears catch them; wild cats, hawks and eagles catch them. Those that live become thin, but still they swim on! At last, after many weeks, Father and Mother Salmon reach the ice-cold lake. There, after the eggs are laid and the little salmon hatch out, the old salmon die. None of the salmon that swim up to the cold lake ever go back to the ocean.

The children thought out their sentences ready to write. Then it was agreed that it would be helpful to hear the paragraph read a second time to check the sentence each had in mind, to see if it really gave the meaning of the paragraph. Then they wrote. The sentences were read and discussed for errors and merits. Here are the best:

"The salmon have a long and hazardous journey in which many die and none return when they swim up the river to raise their young."

"When the salmon go to lay their eggs, they pass through many hardships, but never come back to the sea."

"The salmon always swim up to the cold lakes to lay their eggs but they never return again."

Some omitted the important reason for the journey as in this one:

"The mother and father salmon have a long dangerous journey to the cold little lake and they never come back."

Here is one that kept too much detail:

"Mother and father Salmon have a hard time swimming up to the icy cold lake, because the way is hard and very dangerous, and lots of times animals or people catch them and after their little ones hatch, the other salmon die."

Then here is the worst one:

"In the summer a great school of salmon go into all the lakes up the coast but none of the salmon that swim to the coast ever come back."

The teacher read the third paragraph and after the children had had time to think it over, reread it:

It is the little salmon that go back to the sea. When they are hatched in the ice-cold water, they are no bigger than little pieces of match sticks. They have a rather hard time of it as they work their way down-stream. A great many of them are eaten by the hungry fish they meet. Many of them go off into irrigation ditches and perish on the dry ground of the fields. Those that reach the sea, months later, have grown to be as long as your finger. But in a few years they have become as long as your arm, and then they join the great school and swim back up the river as Mother Salmon did.

Among the best summaries was this:

"The baby salmon are the only ones that come down, but when they grow older they swim up and lay their eggs as Mother Salmon did."

The idea of the return journey to the mountain lake was missed in these:

"The little salmon have a hard journey back to the sea and many perish on the way."

"It is the little salmon that go back to sea, that is if they are not eaten by some other big fish and don't go down irrigation ditches."

In this child's mind the details obscured the main ideas:

"When the little salmon hatch they are no bigger than a match stick, very few of them ever reach the ocean."

On the whole, the summaries were shorter and more stripped of details.

The next paragraph was read twice:

It is easy to catch the salmon when they come in such bunches. The Indians in Alaska go out in their canoes and in a short time spear enough to fill a boat. They then dry the fish by smoking them over the campfire, and put them up in a cache, which is a little wooden house on piles, out of the reach of dogs and wolves. Here they are safe until winter, and the Indians may go off berry-picking and deer-hunting in the late summer and early autumn. The Indians of the interior must have dried salmon for themselves and their dogs. Very often there is nothing else for them to eat.

This time every child had learned the lesson of brevity. The best summary was:

"It is easy to catch the salmon when they are in big schools and the Indians smoke them for winter use."

In the following sentence the idea of winter use was overlooked:

"The salmon are caught by the Indians and are smoked and eaten."

One sentence was even too meager.

"The Indians use them for food."

Then the teacher with the help of the class composed a summary sentence which, though brief, told much.

"The Indians spear salmon by canoefuls and smoke them for winter use."

They counted the words—only twelve. The next paragraph was treated as before:

White men have learned how to keep salmon fresh in cans. Canned salmon is much better than is the Indians' smoked salmon, which is said to taste like an old shoe. (Laughter—"Will you mention that in your summary?" Chorus of "No.") There are large fish canning factories on the Columbia River, on smaller rivers in Oregon and Washington, and on the Yukon and other rivers of Alaska and British Columbia. In summer the factories are busy, but they are closed the rest of the year, and often only watchmen remain in winter. On the Bering Sea shore of Alaska it is too cold for farms, and in British Columbia and south Alaska there is not room enough for farms. At Juneau and at the mouth of the river Skeene, the shore is so mountainous that there is barely enough level land for buildings to be built. This is no place for many people to live. Therefore, at salmon time, a ship loaded with workers and tin cans sails up to the cannery. For a few weeks after the boat arrives at the cannery, the people are very busy at work preparing the fish and packing them into a shipload of fine canned salmon. It is one of the chief products of Alaska, British Columbia, Washington, and Oregon, and is sold in most grocery stores in the United States and England.

The children this time counted their words and again brevity prevailed, one summary bringing out the remark:

"That is short but all the important facts are not there."

The best ones follow:

"The white men along the Pacific coast can the salmon and export them."

"Men have learned how to can salmon and there are many canning factories in Alaska and Northwestern United States."

"The white men can the salmon at big canneries on the Pacific Ocean in the season."

Among the poorest was this in which an unimportant point was stressed and the important point of location left out:

"Many white men can salmon it is better than the Indians' smoked salmon."

There was only one wordy summary. This kind of lesson needs to be repeated at intervals through the year, but for the present the majority in the class had some idea of how to analyze a paragraph, and so could make their reports briefer.

Another plan found helpful is that of selecting paragraph or topic headings. Sometimes this is done with the book open, sometimes pupils listen to the reading. They are good judges, too, as to which headings are best, and they have been known to improve upon the textbook headings.

A third method combines the other two. The paragraph is read and in answer to the question, "What is this about?" each pupil writes the topic. Then in answer to the question, "What did the paragraph tell about this topic?" he makes a summary.

Paragraph. Long, long ages ago, where the country of the Netherlands now is, the great ocean lay. The Rhine, the Scheldt, the Meuse, and the smaller rivers of the region scoured the land over which they flowed and carried to the sea their loads of silt, much of which came from the lofty mountains to the south. This soil was deposited in the shallow water at their mouths, and the winds and the waves washed it back and forth and gradually piled it up in hills, or 'dunes,' not very far from where the shore of the continent is to-day. Between these dunes and the mainland the water still lay. For ages the rivers worked on, depositing their loads in the inland basin behind the dunes until, in time, the accumulations grew so deep that the land began to appear above the surface of the water, gradually extending the shoreline seaward and leaving large lakes in the deepest parts of the basin.[4]

1. "What is the paragraph about?"
   "How Holland was made."

[4] Allen, Nellie B., *The New Europe*, p. 232. Ginn and Co., 1920.

2. "What does the paragraph tell about it?"
"Rivers brought soil from the mountains and deposited it in the ocean at their mouths and so made land."

When the *topic* of the paragraph has been recognized the first step has been taken toward a definite *summary.* Not all paragraphs have been composed carefully enough to lend themselves to summarizing, so the teacher needs to select the paragraphs before conducting such a lesson.

NOTE-TAKING AND OUTLINING

It was stated on page 60 that the task of the elementary teacher is "to train the child to analyze data, to pick out important points, grouping under each the details which belong with it, to eliminate irrelevant material, and finally to arrange the whole according to some pattern that will bring out the essence of the matter."

Through exercises in analyzing paragraphs, writing topic headings, etc., our Fifth Grade children become fairly skillful in picking out important points, and are expected to make use of this power when preparing to make special reports or to act as lecturers on excursions. But these "notes" consist of lists of facts, stated briefly, each fact beginning on a new line, like the sentences in a primer. It is unwise to attempt much in the way of grouping. This step is taken in the Sixth Grade.

Considerable space will be given to an account of this work in note-taking as there is a tendency to assume that children come naturally by the ability to take notes, which theory is abundantly disproved by high school and college notebooks.

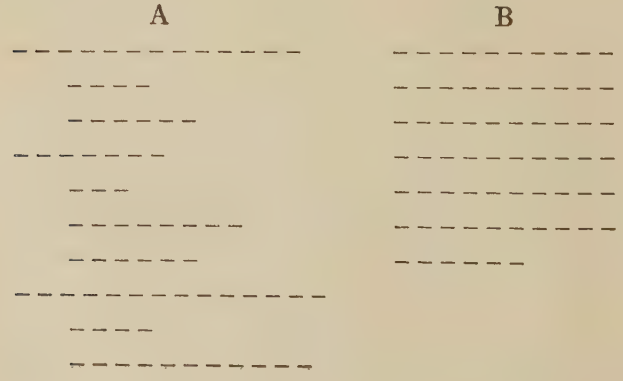
One effective way of beginning a series of lessons on note-taking is for the teacher, in presenting a new topic,

to make conspicuous use of notes, referring to her paper as she talks. Let it be material containing dates, figures, etc., which it would be foolish to memorize, but which are of temporary use in making clear the points to be brought out. The next day she may say:

"You must have noticed, yesterday, that I constantly referred to a paper when I was telling you about————————. That was a page of notes, and I found it very useful. I am going to show you how it looks."

The children will notice that it does not look like a page in a story book; that some lines begin near the margin, and others, grouped under those, begin further from the margin; and the teacher points out that that is the first requisite of good notes—*grouping*, important ideas so placed that they stand out very clearly, the details which go to make up these ideas arranged under them.

The advantage of grouping the points may be made very clear by placing on the board a diagrammatic representation of notes such as the teacher used, each dash standing for a word, and a diagram of words arranged in a solid block.



They readily see that in the first diagram three important ideas are indicated:

"These we will call *main heads* or *main headings;* you will find both terms used. Under the first main head I have shown two subheads. Under the second how many? Under the third, how many?"

The children realize that such an arrangement is a framework that helps to give a clear idea of the topic, and that they are likely to remember material so organized. They realize also that the undifferentiated mass of words represented by the second diagram makes no contribution to clear thinking, and does not constitute a helpful visual image, readily recalled, as does the first arrangement.

When these diagrams have been discussed, the teacher will continue:

"As you go on through school you will need often to know how to take notes. High school and college students could scarcely get on at all unless they were able to do so. Even this year in the Sixth Grade the ability to take notes will help you very much in your studying.

"Suppose we try right now to make a set of notes. Martin has been absent while we have been studying about Magellan. We have used several books.[5] It would be hard for him to make up this work. Let us write out the story and send it to him. Notes will help us to tell things in the right order and prevent our omitting important points. The story will be a long one. We had better divide it into chapters. The titles of these chapters will be our main headings. Write down the titles you think suitable."

When several lists of titles have been read, those selected by the majority are placed on the board, leaving under

[5] Tappan, Eva March, *American Hero Stories.* Houghton Mifflin Co.
Nida, William L., *The Dawn of American History in Europe.* The Macmillan Co.
McMurry, Charles A., *Pioneers on Land and Sea.* The Macmillan Co.

each a space to be used for the subheads. Those chosen by one class are given below:

Childhood and Youth.

A Trip to the East Indies.

Magellan Planned to Circumnavigate the Globe.

Preparations for the Voyage.

The Voyage around the World.

The first two points as elaborated with subheadings by one group are shown below:

Childhood and Youth.
- Magellan was born in the mountains of Portugal in 1480.
- He was of a noble family.
- He was brought up in the royal household.
- He saw exploring expeditions sail from Lisbon.

Trip to the East Indies.
- He went with the Portuguese governor of India.
- He spent seven years as a sailor and soldier.
- He was in several fierce battles.
- In 1509 he saved Captain Serrano from the natives who plotted to kill him.
- Magellan and Serrano became friends.
- Serrano went to the Moluccas in 1514.
- Magellan started home in 1514.

After the whole story has been worked out in note form, and the compositions written, the children are helped to make a better set of notes. They are told that

the notes can be made more serviceable if shortened; that complete sentences are not necessary, and that it is well to abbreviate a good many words. The first two points revised after this manner are given below.

FERDINAND MAGELLAN

Childhood & Youth
- Born in mts. of Portugal, 1480
- Family noble
- Brought up in royal household
- Saw exploring expeditions sail fr Lisbon

Trip to East Indies
- Went with P gov of India
- 7 yrs. sailor & soldier
- In fierce battles
- 1509 saved Capt Serrano fr plot of natives
- M & S became friends
- S went to the Moluccas, 1514
- M started home, 1514

Some children are shocked when they are told that they need not put periods at the end of statements or after abbreviations when taking notes. "Don't you do it?"

"No, not unless the omission of the period will be confusing. Most people do not. It would be foolish for me to attempt to teach you to do the thing so perfectly that you cannot possibly use it in independent study. Notes are not compositions. They are a system of shorthand, hooks on which your mind can hang units of thought. The important thing is for you to learn to pick out rapidly the main points, and arrange the details under them so that at a glance you can see the relation of the ideas. A mass of words is of no use. Subordination[6] of ideas indicated by grouping; proper sequence[6] brevity, those are the important things. Punctuation is not important."

A set of notes should be copied by the children with great care in order that each may have a model to keep in his history notebook.

[6] These words must be explained to Sixth Grade children.

Before they begin to copy, the following points are called to their attention:

1. Use a suitable title, not History, or History Home Work; a title which will make perfectly clear the subject you are considering.
2. Under the title place the name of the book used and the pages referred to.
3. Keep your main headings all the same distance from the margin; this will show that you consider them coördinate or of equal value.
4. Begin the subheadings a half inch further from the margin; this shows that you consider them subordinate to the main headings under which you place them.
5. If a line of your writing is too long to be finished on a line of the paper, the left-over words are to be begun an inch farther from the margin than the line to which they belong, in order that they may be clearly recognized as "tag ends," or "leftovers."

This set of rules may be posted, and the children referred to them as may be necessary.

Until the children have gained considerable facility in note-taking, it is well to require them to draw guide-lines, in order to insure proper spacing.[7] As individuals show a thorough comprehension of the principle of grouping, they may be encouraged to try to get on without the lines. Spacing which is reasonably correct should always be accepted. The aim is not papers perfectly executed but the ability to indicate subordination by spacing, as an aid to clear thinking.

There comes a day when it is decided to take a step in advance. After a topic has been developed by the teacher, the children are asked to suggest the main head-

[7] It seems best to use only three lines. Indentations which fall to the right of the last line may be estimated.

ings for a set of notes. These are written on the blackboard. Then each is considered separately, the subheadings being decided upon. These are not written on the board but are indicated diagrammatically. We now have a set of "skeleton notes," and the children are delighted to try to "cover the dry bones."

During the discussion the teacher records on paper the subheadings chosen. While the children are at work, filling in the subheadings, she makes a model set, using all the details decided upon. When the children have finished, this model is posted for purposes of comparison. Happy is the child whose paper most closely approaches the model.

The first point of such a model is reproduced below, and also the same point as represented diagrammatically on the board.

"Earliest Attempts to Settle Virginia."
T. & K.,[8] pp. 51–53.

Reasons for English wishing to settle in the New World
- Wanted a share in the wealth
- Unemployed sought homes
  - Farms turned into sheep pastures—farmers out of work
  - Soldiers returned fr wars
- People not allowed to worship as they wished

Earliest Attempts to Settle Virginia

Reasons for English wishing to settle in the New World
- — — — — — —
- — — —
  - — — — — — — — — —
  - — — — —
- — — — — — — —

[8] Titles of books are abbreviated. A list of abbreviations of the titles of books most commonly used is posted. T. & K. stands for *A History of the United States*. Thwaites and Kendall. Houghton Mifflin Co., 1924.

Perhaps the children are ready now for greater independence. A topic may be read silently, each child being expected when he has finished to be able to suggest suitable main headings for a set of notes. When the class has agreed on the best main headings, the children copy them and each pupil proceeds to hunt out and write in properly subheadings for each main heading.

Next in order, of course, are exercises executed by the pupils independently from beginning to end.

When children are fairly proficient in taking notes from a book, they may begin to write as the teacher talks or reads aloud to them. It is necessary for the teacher to talk slowly and with many pauses. At first only main headings should be required. Even so there are sure to be some children who are "flustered" and can get nothing down, especially the visually-minded ones. It is better to let them simply listen and try to take mental notes for a time or two. These same children will probably fail completely when fuller notes are attempted for the first time.

Children are apt to think that when they have taken notes on a topic, they know all about it, and in their independent study, especially at home, will neglect other necessary steps. They must be reminded frequently that the mere act of taking notes does not of itself insure mastery of the subject matter, that repetition of the ideas so organized is almost sure to be necessary, that the test of assimilation is the ability to expand the notes they have taken. In the classroom there should be frequent practice in expanding notes both orally and in writing in order to establish the habit, and to keep in mind the uses of the tool they are acquiring. Children

are pleased when a new use is discovered. The first time that answers in note-form are called for in a written test, there are signs of satisfaction. Such a test on a chapter in history was introduced by the teacher as follows:

"You have studied the chapter on "Life in the Colonies," let us find out now how much each has gained from it. I shall put on the board some of the main headings from the chapter. Copy each and fill in the subheadings."

It is not possible to say how many exercises of each of the types suggested will be needed. The number will vary with the groups, but the work should never be hurried. New points must be introduced gradually.

Not until the class as a whole shows considerable skill in taking notes, indicating relationships by proper spacing, is it safe to introduce the use of "labels," symbols used in more elaborate notes or outlines—I, A, etc. Some children will attempt their use as soon as they are left alone to make their own notes. Of course they have often seen outlines and they feel that the symbols "make a paper look so nice." Some realize that the symbols can be so used as to make the meaning clearer than spacing alone does, and it is hard for them to accept the teacher's statement that they are not able to use them. Experience has proved that too early use of such symbols leads to confusion of thought. It is much easier to remember the required spacing than to remember just which symbol should be used to indicate a certain degree of relationship. Very careful supervision is needed all along the line but especially at this point in order that the children shall not use a *form* without a real comprehension of its *meaning*.

It has seemed desirable with some groups to introduce symbols one at a time. When the children have formed

the habit of using Roman numerals to designate main headings, it is safe to introduce the capital letters as "labels" for subheadings of the first order, etc.

The first complete outlines should be very simple and made in class, the teacher and pupils working together.

To emphasize the need of close supervision of this early work, let us consider some papers from a set worked out independently by one Sixth Grade group after having read and discussed the topic, "French and English Explorers; Conflict Between England and Spain," pages 27–30 in Beard & Bagley's History.

There had been some classroom work in outlining, but evidently not enough. The outline which was made together afterward in class is given first, then five specimens of children's work illustrating a variety of mistakes which are likely to occur and which should not be allowed to become habitual.

Blackboard Outline

FRENCH AND ENGLISH EXPLORATIONS; CONFLICT BETWEEN ENGLAND AND SPAIN.

B. & B., pp. 27–30

I. French Exploration
   - A. Eastern Coast of N. A.—Verrazano
   - B. St. Lawrence R.—Cartier
   - C. Port Royal in Arcadia—1604
   - D. Quebec—1608—Champlain
   - E. Great Lakes—several explorers—in search of Chinese cities

II. English Explorations
   - A. Labrador—Cabot—1497, 1498
   - B. Queen Elizabeth's sea-captains
     1. Drake
     2. Raleigh

3. Frobisher
4. Gilbert

C. Voyage around the world—Drake, 1577–1580

III. Conflict between England and Spain

A. Drake plundered S. ships
B. Spain sent Armada to Eng.
C. Armada defeated 1588

Children's Work

First Paper

I. French Explorations

A. South eastern N.A.—Verrazano
B. St. Lawrence River.—Cartier
C. Quebec—Champlain

II. English Explorations

A. Labrador—Cabot—1497
B. Plymouth—Drake—1577
C. San Francisco—Drake

(Unfinished)

Second Paper

I. The French and the English Explorations.

AVerrazano explored the E. coast of N. America in 1524.
BCartier took possession of St. Lawrence River for France.
CChamplain est. Quebec in 1608.
DCabot discovered Labrador in 1497.
EDrake sailed along S.A.

II. Conflict between England and Spain

ADrake plundered Spanish ships
BSpanish Armada defeated by the English.

Third Paper

1. French explorations.

A. Verrazano. Eastern North America.
1. Verrazano an Italian.

B. Cartier and Champlain, St. Lournce river and Quebec

2. English Explorations.
   A Cabot, 1497 Labrador in 1497.
   B.Drake under Queen Elizabeth.
3. The Spanish Armada
   The " " destroyed.

FOURTH PAPER

I French Explorations.
   A. Verrazano discovered North America in 1524
   B. Cartier sailed up the St. Lawrence River in 1604
II English Explorations
   A. In 1497 Cabot discovered North America and planted the English flag there.
   B. In 1580 Drake returned from sailing around the world. He started in the year 1577
III The Conflict between England and Spain
   A. Because of the insults that England was giving Spain the King of Spain excepted a challenge. It was to be a sea fight.
   B. The Spanish lost and their ships were tore to pieces

FIFTH PAPER

I The French Explorations
   a. Verrazano
   b. Cartier and Champlain
II English Explorations
   a. John Cabot
   b. Francis Drake
III Conflict between England and Spain
   a. The defeat of the Spanish Armada.

In the first specimen the framework of the outline stands out clearly; headings of coördinate value are the same dis-

tance from the left-hand margin, the subheadings are indented the required half inch beyond the main headings. But points are omitted and the assignment was unfinished.

In the second paper, the framework is not as evident because the first words of the subheadings follow too closely the letter symbols, and because where subheadings are too long to be written on one line the extra words, "tag ends," as we call them, are not sufficiently indented. This specimen shows complete comprehension of the subject. All that was needed was to point out to the child the greater clearness of the arrangement prescribed.

The third specimen illustrates a very common error; namely, the use of a single subheading. It is frequently necessary to point out to children that if they can find only one subheading, it means that there is only one thing to say and this should be said in the main heading.

This child departed from the accepted evaluation of symbols,—I, A, 1, a,—being the order in which they are commonly used.

The use of ditto marks is unwise. If children once begin to use them, they will sprinkle them in so lavishly that it becomes difficult to follow the meaning.

The framework of the fourth paper is obscured by the misplaced "tag ends." Moreover it is "too wordy."

The fifth paper speaks for itself as having been done too hastily. Also there is faulty ranking of symbols, and in one case a single subheading. This might have been avoided by combining III and *a* as follows:

III. Conflict between England and Spain,
resulting in the defeat of the
Spanish Armada.

When the children are first working with complete outlines, and some of them are floundering and a bit discour-

aged, it is worth while to introduce a bit of nonsense to relieve the tension. The ridiculous letter in outline form from *Daddy Long Legs*[9] is sometimes used:

Mr Daddy-Long-Legs-Smith.

Sir: Having completed the study of argumentation and the science of dividing a thesis into heads, I have decided to adopt the following form for letter writing. It contains all necessary facts, but no unnecessary verbiage.

I. We had written examinations this week in:
   A. Chemistry
   B. History
II. A new dormitory is being built
   A. Its material is:
      1. Red brick.
      2. Gray stone.
   B. Its capacity will be:
      1. One dean, five instructors
      2. Two hundred girls
      3. One housekeeper, three cooks, twenty waitresses, twenty chambermaids.
III. We had junket for dessert to-night.
IV. I am writing a special topic upon the Sources of Shakespeare's Plays.
V. Lou McMahon slipped and fell this afternoon at basketball, and she:
   A. Dislocated her shoulder.
   B. Bruised her knee.
VI. I have a new hat trimmed with:
   A. Blue velvet ribbon.
   B. Two blue quills.
   C. Three red pompons.
VII. It is half-past nine.
VIII. Good night.[10]

Judy

[9] Webster, Jean, *Daddy Long Legs*, p. 157. Century Co., 1902.

[10] In the copy of the letter placed on the board, reproduced here, symbols and spacing have been changed to be consistent with the form used in the class.

As the work progresses, if a child places a detail under a heading to which it is in no way related, he may be told that it is as bad as if Judy had made "Blue velvet ribbon" a subheading under, "We had junket for dessert tonight." He will see the point.

The ability to take notes mentally, to make an outline of a topic as one reads, without setting down anything on paper, and then "carry it around in one's head"—the possession of such power is a goal worth working toward. As a means of training themselves to reach this goal, some children form the habit of making "skeleton" outlines as they study, the main headings written out, all the other points indicated by symbols, for example:

I The condition of the South after the Civil War
- A.
  - 1
  - 2
- B.
  - 1
  - 2
  - 3
- C.

Some children do not use words even for the main headings.

Such outlines are required occasionally. It is interesting to allow the children to test their mastery of the topic by writing the outline from memory and then expanding it into a full outline in writing. A child may then be chosen to give a full recitation from these notes.

A more difficult feat of organization than any already described is the fusing and outlining of material gathered from several sources. One illustration is given of the way

this has been done with the Seventh Grade. After the class had spent several weeks in studying the "Westward Expansion of the United States," using a number of books and magazine articles, an outline was made under the supervision of the history teacher. This was copied by the children to be used as a guide in writing summaries of the information gathered during the study of the Unit. They knew that they would not be expected to follow the outline slavishly. "Uniformity in organization is neither necessary nor desirable. Individual pupils will see the argument in somewhat different lines, and this individuality is to be encouraged rather than suppressed." [11]

As the children finished copying, the English teacher joined the group. This was their first attempt at summarizing a considerable amount of material gathered from different sources, and it was felt that they needed a good deal of help in order that they might produce papers which would be more than mere statements of facts, entirely without literary merit, uninteresting even to the writers themselves. The English teacher made suggestions concerning the introduction, and the transitions from point to point which would keep the papers from being scrappy and disjointed. Two forty-minute lesson periods, with a five-minute break between them, were required for this preparatory work. Some of the children spent six or seven hours in making their rough drafts of the summaries. These were submitted to the history and English teachers for suggestions before they were copied.

Such closely supervised work is, of course, a means of preparation for the free, individual work which children may be expected to do later on.

[11] Morrison, Henry C., *The Practice of Teaching in the Secondary School*, p. 305. University of Chicago Press, 1926.

This class work in summarizing is of especial value to children who undertake longer projects of this kind, which, for lack of a better term, we have called "Juvenile Theses." An account of the development of such "theses" will be found in the following chapter.

It will usually be found that certain children in each class will not profit by work as analytical as the note-taking and outlining described here.

It requires a high degree of analytical ability to be able to pick out the "large thoughts" coördinate in value, and the "supporting details" for each thought—the subordinate points:

> The field of thought, instead of being pictured as a plain, is to be conceived as a very irregular surface, with elevations of various heights scattered over it. And just as hills and mountains rest upon and are approached by the lower land about them, so the larger thoughts are supported and approached by the details that relate to them.[12]

Now if a child, because of immaturity or because of his type of mind, cannot recognize the foothills as related to the mountains, he should not be attempting work of this kind.

There are various reasons for such failures. A child with a good memory, one who learns readily the three R's where facts are on the whole fairly equal in value and little analysis is required, may sail smoothly through primary grades, and also through much of the process work of the upper grades, and fail lamentably in these outline lessons. We often have reason to feel that studies of this kind in history and geography afford the first practical diagnosis of the child who has not the innate ability to go far, or for the brilliant, but immature child who lacks the power of general-

[12] McMurry, Frank M., *How to Study and Teaching How to Study*, p. 92. Houghton Mifflin Co., 1909.

ization which only time can bring. The following extracts from independent study papers illustrate this point.

The first extract is one point from an outline on "The Expansion of the United States." [13]

II. U. S. buys Louisiana for $15,000,000
  A. Lewis & Clark Expedition
  B. Pike's Expedition
  C. Have to go all around terr. of Florida to get to mouth of Miss. desire to buy Fla.

This was the work of a ten-year-old, 150 I. Q. boy, crammed by his over-ambitious parents into the Seventh Grade. He was able to do such work when he had had time to develop.

The second is from an outline on "Life, Labor, and Liberty in America on the Eve of the Revolution:" [14]

I. Population
  A. abt 3,000,000
  B. 1/3 pop. of Eng
    1. settled near Atlantic O
    2. Few frontiers further inland
II. ——————————(?)
  A. Albany
  B. Schenectady
    1. Kentucky by Daniel Boone.
    2. Albany
    3. Schenectady
    4. Appalachian Mts.
    5. Pittsburgh

This boy's 1 and 2 under I. B should have been I. C & D. All the places mentioned are illustrations of settlements

[13] Beard & Bagley, *The History of the American People*, pp. 195–209. The Macmillan Co., 1919.
[14] *Ibid.*, pp. 98–107, 1919 edition. The Macmillan Co., 1919.

more than fifty miles from the Atlantic and should have been placed under I. D.

The writer of this paper is an over-age, extremely faithful boy, I. Q. 95. He is unusually efficient in practical situations, but regularly misses the point of abstract thinking, and will in all probability never be able to handle this type of work.

Nothing is gained by attempting to force children lacking this analytical ability to use an instrument which in their hands cannot function. As soon as it is discovered that they are beyond their depth in such lessons as the preceding they should be provided with another type of work by means of which they can master the minimum essential facts of the subject matter.

CHAPTER IV

HELPING THE CHILD TO ORGANIZE HIS FACTS (Continued)

"JUVENILE THESIS"

In calling the attention of teachers to this work, we lay claim to nothing unique. For a number of years, the country over, children have chosen topics and written them up at length.

However, as we have watched the development of these "*juvenile theses*" in our own classes and elsewhere we have felt that there was less gain than there should be in knowledge of methods of organization of scattered material. Such methods of organization do not germinate spontaneously out of interest, enthusiasm, and persevering application. They constitute the equipment of a student, and their acquisition, by those who are so fortunate as to acquire them, is usually the result of years of fumbling experience, with no credit to the teachers who left the child to flounder himself into economical procedure. We feel that some of this procedure should be regarded as material for direct teaching, in order that the child may become consciously possessed of organization methods and be brought to consciously evaluate their usefulness. To this end we present an account of the Seventh Grade "theses"—"special topics," the children call them.

For several years during the second semester of the Seventh Year many of the children have undertaken a piece of work which tests very thoroughly their ability to

gather and organize data, and is at the same time, to a certain extent, creative. The project is started in the history class, but as the work progresses it requires the help of the English and art teachers, sometimes of others.

The children are familiar with the two methods of studying history—the chronological and the topical; their text is a happy combination of the two. They are told that they are to be given an opportunity to carry on some independent work which will be of especial interest to them, that each one is to choose a topic and work it up in considerable detail. It is made plain that the booklet which will be the result of this work, should show the development, the evolution of the matter in hand.

As the children name possible topics, they are written on the blackboard. It is suggested that they search for still others before the next day, and usually they bring in a number found by looking through other histories, the *Book of Knowledge*, etc., or through discussion with their parents, older brothers and sisters, or friends. These are added to the list. Certain subjects are apt to come up for consideration each year; the first nine in the list given below have been on every list, and usually most of these are chosen. But some children are ambitious to find topics which have "never been done before." The 1924–1925 list contains an unusual number of such topics, see 10–15 below.

TOPICS SUGGESTED, 1924–1925

1. Transportation
2. Communication
3. Inventions
4. Conservation of Natural Resources in the United States
5. Government in the United States
6. Expansion of the United States
7. Slavery

8. The History of New York City
9. Immigration
10. Lighting
11. Farm Machinery
12. Prison Reform
13. Development of Medical Science
14. Welfare Work
15. Housing in New York City

The list is left on the board for several days, and then the children are asked to write down two or three topics which appeal to them, in the order of their preference. It is sometimes desirable to persuade a child to give up a chosen topic. The teacher may know that the topic is too difficult for that child to handle, or that there is very little material available, or that for some other reason the topic is unsuitable. "Prison Reform" and "The Development of Medical Science" were added to the list by two children who were particularly anxious to be original. It was hard to persuade them to give them up, but their mothers agreed that it was not desirable to have their children delving into crime and disease for several months, and helped in finding other original subjects, "Welfare Work" and "Housing in New York City." After each child has chosen his "special topic," he lives on very intimate terms with it for the rest of the semester.

It is explained at the outset that what is intended is not a reproduction of any one book, but a compilation of material gathered from several sources.

Before the children begin a search for material, each child hands in an outline of his paper as he thinks he will develop it. These outlines or tables of contents are usually amended several times before the plans are definitely settled. The tentative plans serve as guides while the

children are first exploring in libraries. The children understand that these plans are tentative, as is shown by the note at the bottom of the following plan:

IMMIGRATION

I. Colonial Period. 1640–1780
   Tell facts about Immigration in this period.
II. Period between 1780–1840
   Facts about it.
III. 1841—present time.

The reason I am able to tell so little is because I am reading a good book at present which may change my whole plan or make me insert many things.

For a week or ten days the children are supposed to search for material and to dip into a number of books if possible. On a specified day they are expected to be ready to begin to take notes. By this time, usually a number of them wish to make some changes in their tables of contents. New phases of their subjects have become apparent to them as they have browsed through books and magazine articles. When such changes have been made the note-taking begins.

By the second half of the Seventh Year most of the children are fairly proficient in the matter of note-taking. The point which needs to be emphasized at the beginning of this undertaking is that the notes for the different chapters should be kept separate. The revised tables of contents serve as guides for subdividing their notebooks. It is not difficult to make them understand the advantages of such an arrangement, but it is not always easy to see that they keep to it as the work progresses. Once having started to take notes from a given volume, it is easy for the child to go on and on without noticing that the author's arrangement is not the same as that decided upon for his own topic. With some children it is necessary to point out again and

again the confusion resulting from thus following the path of least resistance. Indeed the task is a fairly difficult one for any Seventh Grade child. He must select, eliminate, rearrange. It is decidedly easier to take notes step by step as an author develops his subject. The value of the definite plan becomes particularly apparent when a child cannot find, at the moment, the material he needs to finish the chapter on which he is working, and has at hand good material for a later chapter. He is told to use that material and go back later to the unfinished chapter. He comes to recognize that he can avoid confusion so long as he keeps his own plan very definitely in mind.

The children are provided with folders to be kept, when not in use, in a filing case accessible to all. In these folders are to be placed the notes, taken on loose pages of uniform size, those for each chapter kept separate and securely clipped together. *Each* page should be headed with the name of the chapter, and numbered, the numbers starting with one and running consecutively for *each* chapter. Inserts can be made as new material is found,—1 a, etc. The name of the book, and the author should appear above notes taken from that book, and page numbers should be sufficiently numerous to insure ease in referring to passages later on. A well-arranged page of notes for a paper on "Communication" is reproduced here.

CARRIER PIGEONS

Boy With the U. S. Mail, Francis Roth Wheeler [1]

Used by ancient Greeks to send home news of Olympic games, p. 91.

Used at Siege of Paris 1870, p. 92

Prussians surrounded city

All railroads blocked

[1] Lothrop, Lee & Shepard, 1916.

Roads guarded
Rivers dammed
No food could get in
Reread, pp. 95–99
Quote, p. 151

New International Encyclopedia, Volume 16, page 12
Used in time of first Crusade
Saracens used regularly for imp. Com.
Christian commanders used falcons to intercept

Encyclopedia Britannica
Chinese provided pigeons with whistles
Falcons trained to intercept
Scared—did not always work

Until the children show a fair working knowledge of the way to amass from several sources information on a given topic, the history teacher supervises the note-taking rather carefully. There are many pitfalls. A child may lose sight of the plan of the whole in his interest in some one phase; he may wander off into bypaths which lead away from the main idea; he may record unrelated facts in an indistinguishable jumble. One child fails to put topic headings at the tops of the pages; another numbers his pages consecutively without regard to topics; another does not number them at all, misplaces some and cannot replace them; others neglect to record the names of books consulted, or the pages referred to. One boy who intended to quote extensively from a certain book copied the matter verbatim in his notes, twenty-nine compactly written pages, instead of giving the page numbers and writing simply "Quote." This same boy would at first make elaborate notes on pages which he needed simply to reread for general atmosphere.

When it is apparent that a child is spending too much

time in searching for some needed information, he is told to hand in a statement of the things he needs to know and the teacher will aid in the search.

The folders should contain, in addition to the notes, a copy of the table of contents, a bibliography, and an envelope to hold illustrations. The bibliography enables the teacher to keep track of the children's reading with the least expenditure of time. Moreover, it adds to the finished booklet; the reader can judge something of the value of the work by the standing of the authors consulted. This is explained to the children and helps to make them careful in selecting books for reference.

A list of the topics selected and the child or children working upon each is posted near the filing case. Very soon the children have this list thoroughly in mind, and whenever, while searching for material for his own subject, a child comes across something of interest to a classmate, he either brings the book or tells him about it. Magazine articles, newspaper clippings, illustrations from Sunday papers, and the like, come in almost every day. Very few of the children fail to develop an interest in the other people's subjects. Of course teachers suggest books, trips to museums, etc.

Sometimes all the children working on special topics are brought together in order that the teacher may more economically call attention to certain errors which occur frequently. At such conferences also ideas may be developed which have just occurred to the teacher or to one of the group. For instance, a boy who was working on the subject "Plains Indians" read *Star, The Story of an Indian Pony*, by Forrestine C. Hooker.[2] He became so interested in the story that he entirely forgot to make notes.

[2] Doubleday Page & Co., 1925.

When he was through, he realized that there was information he wanted to use in his paper. He planned to reread the book and hunt out this information. He was told that this was an uneconomical use of time, and that some way must be devised to avoid such waste in the future. The teacher realized that it was too much to expect a child to take full notes when reading an exciting story, yet often such stories contain just the information needed. She read a portion of the book to herself, taking "preliminary notes," that is, jotting down the number of the page, with an explanatory word or two, when she came to an item of value for the "thesis" on the "Plains Indians." This interfered comparatively little with the reading. Later she could go back and take full notes on the topics so indicated. In conference with the group, she explained the procedure.

The letters T, M, B (see excerpt from the "preliminary notes" given below) indicate the top, middle, and bottom of the page, a time-saving device when it comes to looking up the references:

Star, The Story of an Indian Pony

Forrestine C. Hooker

p. 34 M. Indian's opinion of white people
57 B. Prayer of the Medicine Man
113 T. Sewing
116 M. 118 B. Tepee
118 B. 119 B. An Indian Fight—
White man's fire-stick
120 T. Prayer-sticks
121 T. Breakfast
122 T. 124 T. Buffalo hunt

Children seldom realize the need of economy in the use of time. It is well worth while to call their attention

to the fact that the habit of "budgeting time" is a decided asset, that the efficient person is the one who plans in advance how his hours are to be spent. But words of advice are not enough, opportunities must be given for the children to make such plans, learning through their mistakes. One way in which this has been done in connection with the "juvenile theses" will be explained in detail.

Class lessons in "regular history" continued while the children were working independently on their "special topics." When they were well started, in order to give them practice in budgeting their time and to parallel more closely the conditions under which the adult must carry on research, the teacher specified certain periods for which she would be responsible, leaving the children free to plan how they would use the periods set aside for study, and usually to decide when they would ask for conferences with one of the teachers, selecting from a schedule of times when the different teachers would be free. When one of the teachers had been looking over the work, she might tell certain children that they should confer with her, but even then she let them plan for the time if possible.

This practice in budgeting time proved very valuable. The plan was in force for eight weeks. During four of those weeks the children were asked to bring in on Monday morning statements of how they spent the study periods during the preceding week, "time-tables," we called them. The child who had planned poorly and had failed to finish the study assignment for the week, started on Monday in debt and had to pay the debt before he began the new assignment or did more work on his special topic. On Monday morning the plan for the week's work was discussed. The children were told what topics in the

textbook were to be considered, they were given a definite study assignment, and were told when teachers would be free to help them. Then three cards were placed on the bulletin board:

I. A schedule of all the history periods for the week, recitation and study.

II. A statement of the study assignment.

III. A schedule of times when conferences might be had by appointment only.

Specimens of these cards are given below.

I

History			March 30–April 3, 1925
Mon.	B.W.S.	Week's work discussed	
	Study	1 Period	H.R.M.
Tues.	B.W.S.	T. & K. pages 264–269	
	Study	1 Period	B.W.S.
	H.W.	1 hr.	
Wed.	B.W.S.,	B. & B. Chap. XIV	
	Study	1 Period	H.R.M.
	H.W.	½ hr.	
Thurs.	B.W.S.	B. & B. Chap. XIV	
	H.W.	½ hr.	
Fri.	Excursion		
	H.W.	1 hr.	

II

History Study Assignment March 30–April 3, 1925

B. & B. Chap. XV, pages 277–286

Answers in writing, to ques. on 286, I & II

Special Topic

Time-table to be made out.

III

History Conferences (by appointment) March 30–April 3, 1925		
Tues.	B.W.S.	Afternoon Recess
		After School until 4.30
Wed.	B.W.S.	Before School
Thurs.	H.R.M.	9.30–10.10
	B.W.S.	Afternoon Recess
Fri.	H.R.M.	After School until 4.30

B.W.S., the initials of the history teacher, appearing in the second column of Card I, indicated to the children that she was responsible for conducting the lesson. On Monday of that week she led the discussion, criticizing the history papers of the previous week, and making suggestions in regard to the advance study assignment. On Tuesday she read aloud a chapter on "Canals and Railroads" from Thwaites and Kendall's *History of the United States*. On Wednesday and Thursday she and the children studied together parts of a very difficult chapter in Beard and Bagley's History—"Three Decades of Political Development."

The teacher's initials in the fourth column, indicated that she would be in the classroom during the study period, ready to confer with children who might need help. Children who did not need help were not required to remain in the classroom if they could work more profitably elsewhere. They might be found in the library; in the art room, conferring about a cover design; in a corner of the basketball court exchanging titles of books or illustrative material; on top of a carpenter's bench, "because they like to work there." But wherever they were, with rare exceptions, they had a purposeful air; they were not wasting time.

This arrangement of time met with the unqualified ap-

proval of every member of the class. One day toward the end of the term the teacher said:

"I have never used just this plan of work before. If children of your age don't like it I need never use it again. I should like to know just how you feel about it. Please write a brief statement telling me whether or not you like it, giving reasons for your approval or disapproval."

She believes that the statements submitted are very genuine, for the children are frequently asked to state their opinions concerning matter and method in school procedure, and those opinions are by no means always complimentary to the "powers that be"; in other words, the children know that the teachers are honest in asking for frank criticism.

Most of the reasons for approval fall under three main headings:

It develops a sense of responsibility.
It gives practice in budgeting time.
It gives a feeling of freedom.

Some children state only one reason, others see several advantages. On the whole the statements show that this opportunity to plan some of their work meets a real need in these children who are beginning to conceive of themselves as personalities and are craving independence.

One child expresses this feeling picturesquely:

"I like your plan of giving us the week's work and letting us plan our time for ourselves because it makes me feel a greater responsibility and a greater interest in the work when I know that I'm my own 'boss.' "

Another says:

"I like the idea of having the history assigned at the beginning of the week because at times I don't feel like doing history work and the special topic seems more inviting, while at times it is just the reverse."

The following statement is somewhat confused but shows an appreciation of one element in wise use of time:

"I like the new plan because in a period, if we have two projects to work on, I might have a good chance to get material for one, and we have to do the other one, now I can do what is best. I think that the plan teaches us self-reliance, and makes us depend on ourselves more than if the teachers did our thinking for us."

Something of the same idea is contained in the following:

"I liked the plan much better by which we could plan our own work for the week than if we had been told what to do at each period. For instance you might start a chapter on the topic and the next period have to do something else while it really would be better to go on with the topic."

The "time-tables" referred to on page 94 made it possible for the teacher to see how the children were planning their work. A tabulation of the "time-tables" of the twenty children for the four weeks during which they were handed in shows that most of the children, unless there was some special reason for doing otherwise, studied the regular history assignment during the early periods of the week and spent whatever time was left over on their special topics. One child explained, "I finish the history assignment quickly, then I get more time to work on my 'special topic.'" This explanation is only one indication that the "special topics," self-chosen, were more popular than the regular history, imposed upon the children, so we are not to judge that the children did first what they liked best, as a dog eats first the meat and then the bread. Another evidence of interest is furnished by the following fact. During a part of the Seventh Grade year, eleven especially good spellers were excused from spelling and were free to use the spelling time for whatever they chose. For the eleven

children there was an aggregate of two hundred and sixteen such free periods. Of these, one hundred and fifty-six, more than two-thirds, were used for work on "special topics."

The children were told to note on their "time-tables" any extra time spent and the reason for spending it. Such notes as the following occur:

"Monday during spelling period I worked on the history outline from *Beard and Bagley*, and I did the same thing on Tuesday at school and at home. I worked extra on it Monday and Tuesday because I wanted the rest of my time for my Special Topic. Thursday's homework time I spent reading *In the Days of the Pioneers* for my special topic and I read extra in that because it was very interesting. Thursday morning I talked to Miss——(the art teacher) about the cover for my special topic."

The motive underlying the practice of doing the required history first is summed up in the following sentence from one "time-table:"

"I worked on my history at home on Wednesday[3] so that I could finish it and get it off my mind."

A child who failed to do the required work because he worked too long on his topic early in the week writes:

"I now see that I spent my time unwisely, not spending enough time on my outline." [4] (He did not err in that way again.)

Exceptions to the sensible rule of doing the required work first usually showed good judgment. A boy who was needing to make frequent use of reference books in the school library for two weeks spent all the study periods at school on his "special topic," and studied his history during the homework periods.

[3] Wednesday was not a history homework day.
[4] Outline referred to was history assignment for the week.

After the children had taken sufficient notes to be ready to write a chapter or two, they felt the need of consulting the teacher who had supervised their written English for two years, and could help them more easily and satisfactorily than could the history teacher, so English as well as history periods were thrown open to them. This fact influenced the planning of the week's work.

The schedule given on page 95 represents such a week. There were seven periods open to the children:

1. In charge of the English teacher.
2. In charge of the history teacher.
3. Homework
4. In charge of English teacher.
5. Homework
6. Homework
7. Homework

The majority of the children worked on their special topics during periods 1, 4, 5, and on the required history during 2 and 3. Some needed more time for the history and used period 6. A few, having obtained what help they needed from the English teacher in one period, finished their history in period 4.

What took place during the conferences can be illustrated by reproducing some of the notes made by the teachers [5] as they read the chapters which the children considered finished:

Subject: INVENTIONS
Table of Contents
Chapter I. Old Home Industry (Finished)
Chapter II. The Growth of Industry
Section I. Machinery for Factories (Finished)
Section II. The Use of Steam

[5] The English teacher's comments are given in the chapter on "Self-Expression Through English Composition," pp. 167–180.

Chapter III. The Results of the Industrial Revolution
Section I.
Section II. Modern Inventions

TEACHER'S NOTES. Chapter I. I think you make a mistake to try to write your first chapter in the present tense. It might be done in the form of letters, perhaps, or in some such way, but as it is, it is a mixture of present and past. The subject matter is interesting and clearly presented except for that mixture.
Chapter II. Section I. Extremely interesting. The transitions in some places are abrupt. Perhaps some dates might be added.

Subject: HOUSING IN NEW YORK CITY

Table of Contents

Chapter I. Colonial Houses	(Finished)
Chapter II. Crowded Tenements	(")
Chapter III. Efforts at Reform	(not started)
Chapter IV. Skyscrapers	(partly done)

TEACHER'S NOTES. It is disjointed. The idea of *growth* is not clear.
Chapter I. It should contain descriptions of early Dutch houses, and of later comfortable colonial homes. You give the idea that there were no steps between log cabins and modern dwellings.
Chapter II. Very good. A few minor changes, to be suggested.
Chapter IV. Earlier business houses should be described as an introduction to the section on skyscrapers.

Subject: INDIANS

Introduction
Chapter I.
Chapter II.

TEACHER'S NOTES. I find no table of contents and no bibliography. Are you intending to write this in past or present tense? It is such a jumble of the two that I could make no headway. I have read only the Introduction.

Subject: WELFARE WORK

Chapters—Chapter I. Hudson Guild		(Finished)
Ready	Chapter II. Henry Street Settlement	(")
	Chapter III. Children's Gardens	(")
	Chapter IV. Municipal Work	(")
Not completed—Chapter V. Other Organizations		

TEACHER'S NOTES.

I. Excellent

II. Not quite so good. I think you have given as the regular method, what would be exceptional. Look over your pamphlets more carefully. Phone to the Settlement or go there, if you cannot find out from the printed matter you have on hand.

III. The chapter is interesting, but you can make it more so after a visit to the Gardens.

IV. This chapter is vague. There is no framework apparent, it is disjointed. There is much excellent material which should be rearranged and "cemented" together according to a definite plan.

Subject: TRANSPORTATION

Table of Contents

Human Transportation	(Ready for typing)
Development of Boats	(" " ")
Stage Coaches and Other Early Vehicles	(" " ")
The Progress of Railroads	(" " ")
Automobiles	(Finished)
Aëroplanes	
Scraps from the Latest News	

TEACHER'S NOTES. Ford was not the first manufacturer of autos.
You should tell more of earlier cars.
Your account of the trial of his car is very good.
Trucks are a type of automobiles.
We should confer as soon as possible.

We will let the children tell what they think they gained from writing these booklets. They were asked one day to

hand in a statement of what they thought they had learned, beside certain facts concerning their chosen topics. The papers were written after a few minutes of quiet reflection, with no opportunity to consult anyone. Several of these papers are reproduced here:

"I have gained from my Special Topic a desire to write another one, more skill in writing, a little more skill in note-taking."

"I think that I gained knowledge of how to budget time; how to go about finding facts, as finding the kind of books to look up in, and to look things up in the books."

"I think my Special Topic has helped me a great, great deal in taking notes quickly and fully. I also think it has helped in writing the story from the notes, which I always found dull and uninteresting. I think it has also aided me in formal English."

"I think working on my topic has given me a better ability to do things by myself. It is my first big piece of work, and it will help me to be able to carry things through. Also, I learned how to make use of notes."

"I have learned from working on my Special Topic that when I want to do a thing I must have it all planned out, either in my mind or on paper, as far as possible; to not go off the track when I start something, and start doing another part of it, or something else entirely. I think that if I had to do another Special Topic or something like it, I could do it easier and better than this one because of the experience I have gained."

Among other things, one girl states, "I found out that research books are usually less inclined to exaggerate than story books.

"I have learned how to classify things for different chapters.

"It has helped me with making true facts, instead of just fiction, interesting, and given me a certain idea of limiting my thoughts so that I can cover the ground, that I did not have before."

Only one child indicates that she is conscious of anything undesirable resulting from the work. She says:

"I think that by doing my topic I have gained a little by writing my notes. I have, I think, also gained the power of a *little* bit more concentration power than I had. I also think that I have lost the

power of liking to write, temporarily, for writing nearly 50 or more pages on the same thing is apt to get tiresome. I also think that I have gained the power of sticking to a thing that I started."

It is quite possible that the work was too difficult for this child. The crudity of her statement in itself shows her limited ability. It has been expected always that some children would need more help than others, and that the finished topics would vary greatly in quality and length.[6] But after having carried through this project with several Seventh Grade groups, we have come to feel that certain children who can carry ordinary Seventh Grade work should not be required to undertake a task requiring such a degree of mental maturity.

It may be well to note also that the project could scarcely be carried out with a large class. The work involved in supervising twenty such topics is a severe tax on the two coöperating teachers. We believe that for a small group of children of marked ability the work is very valuable.

[6] The booklets written during the spring term of 1925 ranged in length from 3,453 to 10,708 words, the average being 6,345. The children were not allowed to copy longhand; it was required that the booklets be typewritten.

CHAPTER V

TEACHING THE CHILD HOW TO MAKE THE MOST ECONOMICAL USE OF HIS MEMORY

For many years school procedure overemphasized mechanical memorizing, "learning by heart," by means of endless drills. Children have been justified in feeling that the teacher's main object in life was to cram facts into their resisting minds, that to forget facts verged upon criminality. In the recent revulsion of feeling against this method there is danger of neglecting all definite memorizing, of trusting entirely to understanding and interest to impress permanently knowledge which the pupils should have stored ready for use.

To underestimate the need of drill is better than to overestimate it, for drill without understanding and interest does very little good. Whereas, once a child is interested in a subject and understands it thoroughly, the impressions received are likely to be more or less permanent without conscious effort on the child's part.

However drill has its place. It is important that a child's mental equipment should include certain frameworks of facts, properly integrated, to which other facts can be related, and usually some drill is necessary for the permanent acquisition of facts. In his fascinating book *A Child's History of the World*,[1] Hillyer gives such "an outline for future filling in" which he calls:

[1] Hillyer, V. M., The Century Co., 1924.

"A TIME TABLE
WITH
DATES AND OTHER FOOD
FOR THOUGHT"

The first twelve items are:

Beginning of the Earth
First Rain-Storm
Plants
Mites
Insects
Fish
Frogs
Snakes
Birds
Animals
Monkeys
People

Then follow sixty-one dates, with from one to five topics connected with each. "The topics selected have not always been the most important—but the most important that can be understood and appreciated by a child." The book is intended for children as young as nine years. The first date given is 4000 B. C., the beginning of the Bronze Age; the last, 1918, the end of the Great War.

Between these are such outstanding facts and dates as:

1700 B. C.	Israelites go to Egypt
1300 B. C.	Exodus: Iron Age Begins
753 B. C.	Founding of Rome
500 B. C.	Brahmanism, Buddhism, Confucianism
336 B. C.–323 B. C.	Alexander the Great
800 A. D.	Charlemagne
1100 A. D.	The Crusades
1440 A. D.	Invention of Printing

1492 A. D. Columbus: Discovery of America
1700 A. D. Peter the Great—etc.

To the teacher Hillyer says:

In order to serve the purpose of a basal outline, which in the future is to be filled in, it is necessary that the Time Table be made a permanent possession of the pupil. This Time Table, therefore, should be studied like the multiplication tables until it is known one hundred per cent and for "keeps," and until the topic connected with each date can be elaborated as much as desired. . . . It is not as difficult as it may sound, if suggestions given in the text for connecting the various events into a sequence and for passing names and events in a condensed review are followed. Hundreds of Calvert [2] children each year are successfully required to do this very thing.

To the children he says:

Don't devour these dates all at once, or they'll make you sick, and you'll never want to see one again. Take them piecemeal, only one or two at a time after each story, and be sure to digest them thoroughly.

Throughout the text the author suggests many interesting devices for aiding the memory. One or two illustrations will suffice to show how thoroughly he knows the child mind. The book will be found helpful by every teacher of young children.

In connection with the map of Mesopotamia, and to impress the new names, Tigris and Euphrates, Hillyer suggests:

You might make these two rivers in the ground of your yard or garden or draw them on the floor if your mother will let you. Just for fun you might name your drinking-cup "Tigris" and your glass "Euphrates." Then call your mouth, into which they both empty, the "Persian Gulf." [3]

Again, after telling of Menes, and what he is supposed to have done for Egypt, he says:

[2] Mr. Hillyer is head master of Calvert School, Baltimore, Maryland.
[3] Hillyer, V. M., *A Child's History of the World*, p. 21. The Century Co., 1924.

. . . he probably lived about 3400 B. C. He may have lived either earlier or later, but as this is an easy date to remember we shall take it for a starting point. You might remember it by supposing it is a telephone number of a person you wanted to call up: "Menes, First Egyptian King . . . 3400 B. C." [4]

It is evident that under Mr. Hillyer's guidance the mastery of this outline of the world's history does not depend upon mere repetition, though repetition is one element in the process. Suggestions are given for "connecting the various events into a sequence," devices are suggested for forming associations; in other words, he depends largely upon "rational memorizing as distinguished from that which is purely mechanical." [5]

It is most important for children to realize that memorizing and thinking are not two entirely different mental processes. To give them a functioning realization of the relation of thought to retention requires eternal vigilance. Even a group of Seventh Grade children, who throughout their school career have been guided in the use of rational methods, if left alone to memorize a poem, let us say, will tend to simply "hammer it in." It has been found that children of this grade profit from definite instruction in the mechanics of memorizing. A series of four lessons given to one Seventh Grade is here reported in detail.

First Lesson

Memorizing Built Upon Thinking

The children were given typewritten copies of Masefield's "On Eastnor Knoll," and asked how they would proceed to memorize it.

[4] *Ibid.*, pp. 28, 29.

[5] Earhart, Lida B., *Teaching Children to Study*, p. 16. Houghton Mifflin Co., 1909.

"I should read it over and over till I knew it,—till it was fixed."

"I should read the whole poem once, then the first stanza. I should try to say it and look if necessary. Memorize each stanza separately."

"First read it and then write it to remember it better."

"Read it several times. Then learn one line at a time, then two lines together."

At that point the teacher remarked:

"No one has told of a sensible way."

The next child did a little better:

"I should read the poem to get the thought first. Then I should learn the stanzas one by one."

The teacher's comment was:

"Ruth has given one valuable suggestion, 'get the thought first.' Her idea of memorizing stanza by stanza is not so good. Now suppose that together we work out a good method of memorizing a poem by studying this one, and then seeing just how we did it.

"John Masefield is an English poet. A knoll is a little hill. I imagine that Masefield is describing in his poem something that he has seen from a little hill somewhere in England.

"The first thing to do is to read the poem through, trying to see the scene as the author describes it. I shall read it to you now. Some of you may care to shut your eyes. Any of you who want to follow as I read may do so."

ON EASTNOR KNOLL[6]

Silent are the woods, and the dim green boughs are
Hushed in the twilight: yonder, in the path through
The apple orchard, is a tired plough-boy
Calling the cows home.

A bright white star blinks, the pale moon rounds, but
Still the red, lurid wreckage of the sunset

[6] Masefield, John, *Collected Poems*, Vol. I, p. 38. The Macmillan Co., 1923.

Smoulders in smoky fire, and burns on
The misty hill-tops.

Ghostly it grows, and darker, the burning
Fades into smoke, and now the gusty oaks are
A silent army of phantoms thronging
A land of shadows.

"I do not believe that all of you understand all of the poem. Perhaps some of you do not like it very well. If that is the case, I imagine that it is because you do not understand some parts and so cannot see the pictures.

"There is no use in starting to memorize it until you do understand it. Words which we study parrot-fashion are not apt to 'stick' very well, and they give us no pleasure, make us no richer. William James, one of the greatest educators, tells, in words that I think you can understand, what one should do when one starts to memorize material which is new to him. He says, '. . . The art of memorizing is the art of *thinking;* . . . when we fix a new thing in either our own mind or a pupil's, our conscious effort should not be so much to *impress* and retain as to connect it with something else already there. The connecting *is* the thinking, and if we attend clearly to the connection, the connected thing will certainly be likely to remain within recall.'[7]

"Well, let us try the plan of first thinking about the poem. That is just what your teachers have always done with you when they have given you a poem to memorize, but you have not realized that the thinking was a part of the memorizing. I want you now to realize that so fully that you will not, when studying independently, start to memorize anything until you understand it.

"Suppose I reread the poem. Then I want you to tell me what it is about, perhaps by suggesting another title."

To give all details of the discussion would occupy more space than can be devoted to this lesson. As questions were asked and answered, something like an outline of the poem became apparent. This is given below, the words

[7] James, William, *Talks to Teachers*, p. 142. Henry Holt & Co., 1901. With some groups it may be necessary to paraphrase this selection.

in parentheses indicating some of the associations made with past experiences.

The children understood that the poet is describing a sunset, not in one picture, as an artist might paint it, but in a series of sketches, three separate pictures, in fact, one in each stanza. As a title "A Sunset Seen From Eastnor Knoll" was suggested:

A Sunset Seen From Eastnor Knoll

I. Twilight
- Silent woods (The wind often dies down at sunset and everything seems hushed; birds do not sing.)
- Dim green boughs (The light was beginning to fade.)
- Tired plough-boy (You are tired after a day of work or play in the open air.)
- Calling the cows home. (John—I used to help bring in the cows when I was on a farm one summer, and sometimes we stopped to see the pretty colors in the sky.)

II. A Little Later.
- A bright white star (It would be yellow later.)
- Pale moon (How many of you have seen the moon looking white like paper in the early evening?)
- The red, lurid wreckage of the sunset (That is hard. Look in your dictionary for *lurid*. Wreckage—the sunset is past its greatest glory. It is beginning "to go to pieces," we might say.)
- Smoulders in smoky fire (The colors are not as bright as they were.)
- Burns on the misty hill-tops. (The outline of the hills is not clear against the sky as it was earlier.)

III. Still later.
- Ghostly it grows, and darker (Ghosts are always associated with night and darkness.)
- The burning fades into smoke (All the red has gone from the sky and the clouds are a smoky grey. Many sunsets end that way.)
- The gusty oaks. (The wind has risen again and the boughs

of the oaks are moved by it, but the poet is too far away to hear the rustling for he calls them—)
A silent army of phantoms (Ghost-like creatures.)
Thronging a land of shadows. (The light has almost gone; all is dark and mysterious.)

" Now that you have thought the poem through carefully and connected parts of it with things that we have known before, associated new ideas with old ones, I am going to read it again so that we can judge whether we have in our minds clear and complete impressions of the pictures the author painted for us. If the impression in the beginning gives you a feeling of confusion and uncertainty you are apt to have that same feeling each time the subject is referred to. Then if you ever are to have a clear idea of the subject you have to unlearn and relearn, so to speak, and that takes much more time than it does to learn properly in the first place.[8]

" For many years I used what was called vertical penmanship. Most of the letters were the same shape as in the system I now use, but these letters slant and those stood up straight. The capital S however, was an entirely different shape. (The two forms were placed side by side on the blackboard—S, *S*.) Since my last name begins with S, I had made many, many S's and the pattern was very clearly developed. Now, whenever I am writing in a great hurry, that old pattern insists on being made and I find myself making a capital S after the old fashion. If another S follows almost immediately it is apt to be made according to my present style, and I have a ridiculous thing like this—*Summer Sea*. The new form objects to the old and insists on being used. This happens to me over and over again when I am in a hurry, or am very tired. You see relearning is not so satisfactory as learning properly to begin with. There is apt *always* to be some confusion of the two patterns.

"Listen, now while I reread the poem,

" How many of you saw clearly the three pictures? Does anyone want to ask a question about any point? I wonder how many of you find that you have already begun to memorize the poem. With-

[8] " A wrong association is very hard to eradicate. It introduces an element of competition into the working of the association. . . ." Watt, H. J., *The Economy and Training of Memory*, p. 128. Longman, Green & Co., 1909.

out looking at your copy, see how much of it you can say with me as I read it once more. How many of you in some places knew before I said them what words were coming? (Many hands went up.) I thought so. Professor James was right you see, *thinking is remembering*, or the biggest part of it at any rate.

" Probably, however, no one knows the whole poem. We shall need to make the impressions deeper by repetition. Read the poem from beginning to end, from beginning to end. Do not study it 'piecemeal,' impress the whole poem, and the whole poem is likely to come back when you want it. Some of you like to study a poem by tiny bits and then cement the bits together. Experiments [9] have proved that time is saved in memorizing poetry by using the 'whole method' as it is called, with even long poems. The longest experimented with was two hundred and forty lines in length. That is a longer poem than you are asked to learn. Some children have come to realize the advantage of the 'whole method' in memorizing poetry. A boy said to me once, ' When I go over and over the whole poem, I get the sweep of the ideas. When I study a little bit and then another little bit, I get just words.'

" Some of you seem to find the 'whole method' so very hard that it may be wiser for you to break a long poem into rather large sections and learn each section as a whole.[10] This poem is so short, only twelve lines, that that should not be necessary. It could be taken a stanza at a time, for each stanza gives a complete picture, and might be taken as a whole. But I repeat that I believe every one of you should try to learn this poem as a whole.

"Now suppose you study quietly for a few minutes."

Some children, a very few, were ready to recite in five minutes. They were permitted to do so. Comment was made upon the fact that some people memorize more quickly than others do.

[9] Pyle, William Henry, *The Psychology of Learning*, p. 107. Warwick and York, Inc., 1921.

[10] This procedure is sanctioned by Pyle. *Ibid.*, p. 107. Some children seem unable to keep their attention fixed throughout a long selection, and are so panic-stricken at the very idea of having to study in that way that they fail to memorize the selection.

Second Lesson

Speed in Memorizing

"Some of you memorize much more quickly than others. I wonder why?"

John: "I have a poor memory."

" Perhaps you have, but from the expression on your face during the little study period yesterday, I think you were not paying very good attention to the work. Repetition must be thoughtful repetition or it does not do much good; your 'wits go woolgathering.' Let us see what may have been happening. I wonder whether this is not what took place, John. When you came to the words 'Calling the cows home' you forgot the poem and began to live over again some of the jolly times you have had doing that very thing.

" Perhaps someone's attention wandered when he came to the words 'smoulders in smoky fire,' because not long ago he had seen a fire. It was a very exciting experience and made a deep impression on his mind, so the words 'smoky fire' called up that experience.

" Another child may have been getting along very well until he came to the word 'ghostly.' Let us suppose that the night before he was reading *The Legend of Sleepy Hollow*. The word 'ghostly' suggested the 'Headless Horseman,' and off he went, following him and chuckling about the pumpkin. The impression of the story was very fresh and strong and attractive, and held his attention.

" A fourth child may have forgotten the poem when she heard some noise from the street, and her mind was filled with questions as to what caused the noise.

" For a time at least, those four children were not paying attention to the poem. Ideas which had nothing to do with the poem became active, in the first three cases because some word or words in the poem suggested those ideas, which being especially interesting to them, filled their consciousness. They may even have gone on saying the words of the poem, but not being conscious of them.

" The question is, What should they do to get their attention back to the poem? And it is not an easy question to answer.

" Educators differ about the matter of attention, but I can give you a few suggestions that may prove helpful especially when starting a study period. One's mind is more apt to run smoothly in the proper

paths: (1) if one is sitting up straight, in a wide-awake attitude than if one is lounging back lazily, (2) if one starts promptly on the task instead of fidgeting with things on the desk or looking out of the window, or getting up to get a drink or sharpen a pencil after one has sat down with the idea of beginning, (3) if one sets a time limit, 'I mean to finish this task in fifteen minutes,' for example, (4) if one studies aloud.

" Let us consider that last point for a moment. If you hear and feel yourself say the words, the impression made on your mind is deeper than if you simply see them. It is desirable to consider a fact in as many ways as possible, so as to make a very complete impression. Moreover, an impression which includes sight images, sound images, and muscular images is more apt to be recalled. The sound of the words, their appearance, feelings in your throat are all apt to recall it.

" You may start to study sensibly, promptly, sitting in an erect position, reading aloud, and may study vigorously for a time. Then suddenly you may realize that you are not thinking about your work. You may do one of two things, let your mind drift, or start over again to pay attention.

"Sometimes because one is tired, or because the subject is very uninteresting it seems as if it were impossible to keep the attention from wandering. It may be wise then to drop the matter and take it up later when one can attack it freshly. We may then be surprised to find that we know the subject better than we thought we did, and, in truth, the impression may have been deepened during the period of rest. James tells us that the nourishment carried to the brain by the blood helps to strengthen the impressions made there by our thinking.[11] This takes time. It is often wise then, not to attempt to learn a thing at one sitting, but to devote two or three periods to the memorizing. You know that this is true in learning some new motion, like a certain stroke in tennis. Probably some of you have been surprised by finding that you could do better on Thursday than you did on Tuesday, the last day you practiced. This led one author to say that we 'learn to swim during the winter and to skate during the summer.' [12] Some of you may have had the experience of discovering that you could recite smoothly and perfectly in the morning

[11] James, William, *Psychology: Briefer Course*, pp. 137–138. Henry Holt & Co., 1904.

[12] Quoted by James, *Ibid.*, p. 138.

something which you had memorized with difficulty and poorly the evening before. It seemed to impress itself upon your mind while you slept. Breaks in study are often helpful; especially is it a good thing to review after a night's rest.[13]

"Sometimes it is wise to stop and exercise for five or ten minutes and then go back to your work. Try never to sit with your mind drifting idly when you are supposed to be studying. If you find it impossible to pay attention and study vigorously, deliberately get up and do something active, forget your work for a few minutes, play ball, run around the block, jump rope, wash your face with cold water,—do something vigorous and then go back and work hard."

Third Lesson

Good and Poor Memories

"When I asked you why some people memorize more quickly than others, John suggested that some people have poor memories. I did not treat the suggestion very respectfully at the time. Instead, I took up the matter of paying attention. But it is true that people's minds differ greatly in *native retentiveness*, that is, in some people an impression, once in the mind, seems to remain there always, ready to be recalled or remembered, while in other people the impressions seem to fade very quickly.

"Some educators feel that the substance of the brain is different in different people and that that fact accounts for the difference in native retentiveness. They believe that whatever the quality of a person's brain tissue it cannot be changed, but this does not mean that a person with poor native retentiveness need say to himself, 'I have a poor memory, and I can't help it,' and then expect to be excused when he forgets important duties. Not at all. Such people can do a great deal to help themselves to remember things. Make

[13] "In normal memory the process of organization is continually going on, and in order that ideas may become a part of the permanent memory, time must elapse for the organization or consolidation to be completed. Anything that interferes with this hinders acquisition. Evidence seems to be added by unpublished studies by Dallenback showing that a period of eight hours of sleep is much more favorable to retention than a waking period of eight hours." Burnham, William H., *The Normal Mind*, p. 510. D. Appleton & Co., 1924.

associations with the facts, and more associations and still more associations, and then the facts are likely to be held in their minds.

"The people with good native retentiveness are by no means always the most intelligent. Some people who can repeat verbatim whole pages of printed matter after one reading seem unable to think about what they read. Sometimes rather dull people can remember every 'phone number they ever use, every address or date that is once familiar. Other people with very good intelligence find verbatim memorizing very difficult, and are not able to remember dates or addresses or other separate facts without especial effort.

"One lady I knew was asked to give a lecture on a very difficult subject. She had no trouble in preparing the lecture, but when the day came for her to deliver it, she had forgotten that it was the date set and did not appear in the lecture hall.

"We should all find it most convenient to have very retentive memories, minds like 'wax under a seal' from which no impression could be wiped out. People who have such minds and who in addition think deeply have remarkable mental power.

"It happens, however, that many of the persons who have climbed to the greatest heights of mental achievement have been those who recognized that their native retentiveness was poor and have set about to overcome this handicap. You have heard of cases of extremely delicate children, who have grown up to be especially sturdy because everything possible was done to make them strong.

"If some of you find that you do not remember as easily as your classmates, do not be discouraged. You may, if you work intelligently, become very successful students. Form the habit of always associating new facts with facts that are already in your mind. Deepen the impression of the thing you want to remember by considering it very carefully, finding out all you can about it, its color, sound, use, location, etc. Ask yourself questions about its meaning, causes, results, or what not, and then try to find the answers. You may have been uninterested at first, but the more you learn about a subject, the more interested you are apt to become, and you know that when anything interests you very much you are pretty sure to remember it. Sometimes tasks are set you which are uninteresting. If you can make yourself interested, you are more likely to succeed."

(Here a child protested), "You can't *make* yourself interested. Things are just interesting or they aren't."

"You cannot make yourself interested by just saying, 'I'll be interested.' You can, however, work up an interest as I have suggested by studying into the subject and associating it with past experience. But whatever you do, don't be silly enough to make the feeling of dislike stronger by saying, 'I hate this old lesson.'

"There are some facts which seem to stand alone, like dates, the spelling of words, etc. If one has poor native retentiveness what can he do to help himself remember such things? Some people would help themselves by saying over and over the two things which they wish to remember together,—'Columbus—1492'; 'Saturday—lecture.' Whenever the idea 'Saturday' came up it would tend to drag 'lecture' with it, and *vice versa*. As a matter of fact, the lady of whom I told you tied up with the idea 'Saturday' the idea 'I must clean my closet.' So when Saturday came she cleaned her closet and forgot the lecture. You see that it is important to tie together the right ideas. This the lady of the lecture usually does, and while her native retentiveness is poor, she has developed a reliable practical memory. Long before loose-leafed notebooks and card catalogues were in use, she invented similar aids for herself. Sometimes just the fact of making a written record causes her to remember, and she does not need to look it up in her file.

"There are people who help themselves to remember such things by changing a ring to a finger on which they usually do not wear one. Every time they feel it to be uncomfortable, they think of the thing they have associated with it. Others carry little books in which they make note of things to be done. If one has very poor native retentiveness he ought to do something of the kind to avoid inconveniencing other people by his forgetfulness.

"It is very nice to be born one of the people who never misspell a word once seen and who never confuse a rule once understood. But some children who are not so blessed, make themselves just as reliable by inventing funny little devices. For example, some class which had trouble to spell *arithmetic* invented a nonsense statement, the initial letters of which form the word, '*A* rat *i*n *t*he *h*ouse *m*ay *e*at *t*he *i*ce-*c*ream.'

"*Their* and *there* are puzzling. The one that means place and is the opposite of *here* has a *here* shut up in it. Is *their* spelled th*e*ir or th*i*er? Somebody discovered that it means both *hers* and *his* together, and that since ladies precede gentleman, the *e* comes before

the *i*. In trying to learn *to* and *too* a little girl always said to herself that the one that means *too many* has more o's than the other, too many o's for comfort, in fact.

"It is good fun and a valuable exercise to make a game of inventing such tricks. In the light of what you have been learning do you see why such silly seeming tricks are useful?"

A number of children showed by their answers to this question that they really did see the value.

"Yes, they keep you thinking about the point for a longer time."
"They make you interested."
"They make the impression deeper."

Fourth Lesson

Application of Principles to New Material

The method of memorizing which had been developed in connection with learning the poem "On Eastnor Knoll" was reviewed in connection with quite different material which also involved rote memory.

The history assignment included a list of the "Four Important Powers of Congress," and the children were expected to memorize the list. The preliminary discussion, intended to review the method of memorizing and insure proper application of the same, began somewhat as follows:

Read the list of the "Four Important Powers of Congress" given on page 181.[14]

. . . "Under the new plan Congress was given power to:

(1) lay and collect taxes without asking the help of state governments;

(2) raise and support armies and naval forces directly without calling on the states for permission;

[14] Beard and Bagley, *The History of the American People*, p. 181. The Macmillan Co., 1925.

(3) regulate trade and commerce with foreign countries and between the states;
(4) do all things necessary and proper to carry into effect the powers conferred by the Constitution."

"Do you understand them well enough to make it sensible to begin to impress them? Remember that thinking is a large part of remembering; that we should be sure to have a clear and accurate first impression. Reread the list with these points in mind.

"Now if any point or points are not clear to you, ask me questions until they are."

After a number of questions had been answered by the teacher or by children, the teacher concluded:

"If you are studying alone, you will have to get answers to your questions in some other way. Perhaps you will need to consult the dictionary, perhaps you should read about these powers in some book which explains them more fully. *Civil Government* is such a book.[15] In any case, you should not begin to memorize them until you do understand them."

* * * * * * * * *

While geography as at present taught is no longer a matter of learning boundaries, lists of capital cities, and of exports and imports, etc., certain geographical facts must be memorized if children are to have a framework into which to fit new facts, any permanent body of geographical knowledge. But the thinking must come first. We cannot be sure that studying why Chicago grew so large will fix the exact location of Chicago in a child's mind, so it must be studied, but we should be sure that he knows something about the place before we expect him to memorize its location. As one teacher puts it, "The memorizing of locations must come at the end of the study of a region when the names are 'freighted with meaning.'" Furthermore, in

[15] Schwinn and Stevenson, *Civil Government*. J. B. Lippincott Co., 1913.

setting the child the task of memorizing a list of locations, we should be very sure that he is not merely repeating words, but that in addition to ideas in regard to the places themselves, he is also visualizing their position on a map in relation to other known places. Pupils start such a study by locating the places on desk outline maps with books open and the teacher constantly supervising the work. Then they learn each location, testing themselves on a wall outline map which contains no names. The teacher finally tests the class by pointing to the places on this map while the pupils write the names. This makes for exact memorizing after a few such lessons.

As we all know, modern methods require but little rote memorizing in connection with history and geography; more and more we are striving to replace this with associative memorizing. This subject has been so fully discussed that little more need be said.

We call the children's attention to the relation of organization of data to retention and recall. As often as seems necessary, we remind them that facts properly classified, worked into some logical system of cause and effect, of relative importance, of comparison or contrast, are more easily remembered than isolated facts "hammered in" ever so hard.

We emphasize the importance of memorizing principles and pivotal events rather than endless details. A favorite expression of one teacher is, "Don't make junk shops of your minds. Try to have them work shops, in which the tools and materials are pigeonholed and labeled so that they can be found and used when wanted."

Another expression is, "I shall not expect you to know all the details of that lesson a month from now, but you ought to know them pretty well to-morrow."

When the children first hear this, they are sure to say, "What is the use of learning it at all if we are going to forget it again so soon?"

Some child may call attention to the fact that his parents and their friends seem to have forgotten much of what they studied at school. This serves as a good introduction to a discussion of what James calls the "*unconscious* and *unreproducible* part of our acquisitions." In simple words we can give the children the substance of James' exposition of this subject in *Talks to Teachers:* [16]

> Professor Ebbinghaus's experiments (into the rate of forgetting) show that things which we are quite unable definitely to recall have nevertheless impressed themselves, in some way, upon the structure of the mind. We are different for having once learned them. . . . It is but a small part of our experience in life that we are ever able articulately to recall, and yet the whole of it has had its influence in shaping our character and defining our tendencies to judge and act. Although the ready memory is a great blessing to its possessor, the vaguer meaning of a subject, of having once had to do with it, of its neighborhood, and, of where we may go to recover it again, constitutes in most men and women the chief fruit of their education. This is true even in professional education. The doctor, the lawyer, are seldom able to decide upon a case off-hand. They differ from other men only through the fact that they know how to get at the material for decision in five minutes or half an hour; whereas the layman is unable to get at the material at all, not knowing in what books and indexes to look, or not understanding the technical terms.

The fact that knowledge which is quickly forgotten may be valuable as a stepping-stone to the understanding of important points should be impressed upon the children. A realization of the value of this unreproducible knowledge may be a great comfort to children who work earnestly yet always "cut a poor figure" when exact reproduction is re-

[16] James, William, *Talks to Teachers*, pp. 141–142. Henry Holt & Co., 1901.

quired. We teachers should be on our guard against the tendency to estimate the value of our work by the definitely reproduced results, and to value too highly the "glib and ready reproducer." What James has to say on this subject might well be read and reread by every teacher at frequent intervals until it has sunk so deep into our consciousness that we cease everlastingly trying to dig knowledge up by the roots to see whether it is sprouting:

> Be patient, then, and sympathetic with the type of mind that cuts a poor figure in examinations. It may, in the long examination which life sets us, come out in the end in better shape than the glib and ready reproducer, its passions being deeper, its purposes more worthy, its combining power less commonplace, and its total mental output consequently more important.[17]

Children who have assimilated the lessons reported in this chapter are somewhat fortified against the temptation to depend upon rote memory in preparing their daily lessons, and to *cram* for examinations. However, it seems desirable, from time to time, explicitly to point out to them the harm resulting from the habit; to remind them that any effort to "hammer in" facts gives no time for making associations; that facts so learned are almost sure to be forgotten in a short time, not having been woven together with other facts into a logical system.

But counsel is not enough. Unconsciously a teacher may defeat her purpose:

> How children study in preparation for the recitation depends upon how the recitation itself is conducted, upon what is *first* called for there and what is most emphasized. . . . If the children find that the teacher's questions usually begin with what, or where, or when, thereby merely calling for direct reproduction of the substance of the text, she may talk ever so much about right methods of study, but they will memorize before thinking and without thinking.

[17] *Ibid.*, pp. 142–143.

Very many of the questions should test not so much knowledge of the text as the pupil's way of treating the text. The spirit of the teacher's usual general question should be, How have you associated or related these facts? [18]

There is not space to quote the two pages devoted to detailed suggestions along this line. Those who have not read the book recently will find inspiration in rereading it, for it is easy to fall into the habit of asking the what-where-when type of questions. *Why* and *how* are safer words, and yet children can memorize lists of reasons without understanding them.

We feel that emphasis placed upon the organization of data is one powerful influence against the inclination to "gulp down facts, hold them undigested for a few hours, and then disgorge them." [19]

In assigning a lesson, the teacher frequently asks for suggestions from the children as to the best method of studying this particular lesson so that the meaning will be clear. Often written evidence of some form of organization is required, notes, outlines, questions, etc. In addition, the children are accustomed to being asked to give such evidences during recitations. One or two illustrations will suffice.

After a group had studied the Articles of Confederation, they were asked one day to test themselves on their knowledge of the subject. The teacher's instructions were somewhat as follows:

"You will have only twenty minutes. I want to see the papers, in order that I may be able to help any of you who did not study wisely, so you will need to make them full enough for me to understand. Naturally you cannot put in all the details you have read. You will

[18] McMurry, Frank M., *How to Study and Teaching How to Study*, p. 188. Houghton Mifflin Co., 1909.

[19] *Ibid.*, p. 186.

have to judge as to what is important enough to be included in such a test."

The topic "The Constitution in the Hands of the People" had been read up in several books. At the beginning of the recitation period devoted to discussing the topic, the children were asked to write a paragraph giving their impressions, based upon their reading, of the way the mass of the people felt about the Constitution when they first read it.

Sometimes a lesson is assigned without any statement of its aim, or discussion of methods of study. In that case the recitation period may be devoted to a discussion of the methods employed by different children, and a comparison of results.

Again, if a child's contribution to a class discussion shows that he does not understand the subject, it may be well to ask him how he studied the lesson. If his method was poor, he may profit by hearing others describe better methods. If, however, we would be sure that children will not fall back upon mechanical memorizing, we must see to it that the work is interesting and the atmosphere of the classroom is happy and free. Responsibility for interest in the work should not rest solely upon the teacher. As was pointed out on page 118, children can learn to "work up an interest" in topics which do not at first seem attractive, and pupils in upper elementary grades should be expected to develop this power. Mental flabbiness results if children never have to exert themselves in this way. However, the teacher cannot shift her responsibility. Hers is the major share. She must see to it that the matter under consideration is worth discussing and is presented in an interesting manner. And for the atmosphere of the class-

room the responsibility is almost solely hers. A caustic, sarcastic manner, or a weary mechanical tone will kill interest and initiative, and minimize all efforts to instill proper habits of study:

> My grandmother sent me to school, but I looked at the master, and saw that he was a smooth round ferule, or an improper noun, or a vulgar fraction, and refused to obey him. Or he was a piece of string, a rag, a willow wand, and I had contemptuous pity. But one was a well of cool, deep water, and looking in suddenly one day, I saw the stars. That one gave me all my schooling.[20]

[20] Curtis, George William, *Prue and I.*

CHAPTER VI

MAKING IDEAS FUNCTION

We have considered in the preceding chapters certain stages in the process of learning, a clear comprehension of the aim of the lesson, intelligent methods of collecting and organizing data and of memorizing the points which should be permanently retained by the student. But it may be that the process is not yet complete. We must have proof that the ideas have been assimilated, have become a part of the mental structure of the student, have furnished "spiritual nourishment." The ability *to use them* furnishes such proof. The term *use* is not here considered in a narrow utilitarian sense. Ideas are used profitably not only in earning a living, but in making life full and joyous, in performing the duties of citizenship; in accomplishing any worth-while purpose whatsoever.

In theory we accept this idea of the purpose and test of education, in practice, many of us ignore them. Examinations, overlarge classes, the complexities and rigid regulations of great school systems—how can teachers create the serene atmosphere, how can they give the time necessary for the conversion of facts into "spiritual nourishment"? Under existing conditions, many teachers cannot perform this miracle, while some of us, more fortunately circumstanced, often lose sight of the goal, and thoughtlessly place emphasis on the storing of facts, rather than on the development of power.

However, some of us sometimes remember our ideal. Perhaps some of the ways in which we have tried to train children to make use of the information they gain, the skills they have acquired, may prove helpful to others not so free to experiment. Our ultimate aim, of course, is the establishment in the student of a *habit* of mind, a determination to absorb real nourishment from the subjects studied, an automatic testing of the degree of assimilation. But this is no mushroom growth. It is hard to fix habits firmly. We must try to make children realize that they are studying, not to please teachers or parents, not to accumulate stores of facts, but to gain greater power to understand life, and to live efficiently. Therefore, they must be trained to ask themselves continually: Can I prove that I understand that statement? Can I make this rule work? Can I give an illustration? What do I know that might explain that fact? What would be the result of such an action? If teachers and pupils are constantly asking such questions during the years spent in the elementary grades, a fair start should be made.

The degree of assimilation achieved in subjects which involve the use of material and actual tools can be gauged with comparative ease. The box made in the shop will not close. Something is wrong. Either the pupil did not understand the method, or worked carelessly. The test is tangible, unavoidable. Teacher and pupil face it together. So it is with music, art, science. So also with mechanical subject matter such as the multiplication table, the child can use the tool or he cannot, there is nothing subtle or elusive about it.

It is not so easy to test the degree of assimilation in subjects like literature, history, civics. "The test of language is translation and reading; the test of mathematics,

solving problems; the test of literature, not so much detailed historical knowledge as appreciation of the best and the ability to judge or criticize a piece of literature." [1] In such testing, the child needs constant guidance. Again and again "he does not know when he does not know," and it is our business to help him to see his deficiency and correct it.

The use of ideas is not deferred entirely until all other "steps" have been taken. Hall-Quest considers the application of ideas under two headings, "Doing as a Process of Learning," and "Doing as a Test of Learning." [2] Appropriating these captions, combining them with one embodying the purpose of education, and making certain subdivisions, we arrive at an outline which helps us to check up our practice and assure ourselves that we are not neglecting any of the "Doings."

I. Doing as a Process of Learning
   A. Repetition for the sake of retention
   B. Knowledge applied to new situations
II. Doing as a Test of Learning
III. Doing as the Goal of Learning

In the instances of the use of ideas given below, there will be no attempt at a hard and fast classification. Indeed, there cannot be such a separation since a project may serve more than one end; for example, it may at the same time test knowledge and possess practical social value, as does much of the dramatization undertaken by the children; testing the understanding of the characters portrayed and furnishing entertainment to other pupils.

[1] Hall-Quest, Alfred L., *Supervised Study*, pp. 219–220. The Macmillan Co., 1923.
[2] *Ibid.*, pp. 218–219.

I. DOING AS A PROCESS OF LEARNING

A. Repetition for the Sake of Retention

Under certain carefully controlled conditions, practice does tend toward perfection. The words repeated, the act performed thoughtfully with intelligent purpose many times becomes more and more automatic. If the letters of a word are consciously said and looked at, the writing of the word several times will impress its spelling. Rhythm and auditory and visual imagery impress the multiplication table, lines of poetry, facts in history, or geography. Hence drill is not to be abandoned. The difficulty is that children so readily automatize the drill and while saying or writing the words of the text, set their minds scot free for more important thoughts on baseball or adventure stories. Hence, "Doing as a Process of Learning" must often involve a rearrangement or statement of the facts which will insure close attention, and under this head we may include not only drill repetition but the preparing of papers on subjects previously studied. Such an exercise serves to clarify thought, to increase the number of associations, and so to elaborate and deepen the impressions and make them more permanent. We are thinking not alone of mere reproduction but of reorganization of familiar material, etc.

The ability to reorganize presupposes a fair degree of understanding; therefore, the exercise is also a test of assimilation. It may be in addition a goal, as when the finished product is used to instruct or entertain others.

For instance, on one occasion, while a group was hearing the story of Balboa read by the teacher, one member of the class was absent. For his benefit the story was reproduced in writing. These papers served the purpose of reviewing

and testing as well as the practical purpose of giving the information to the absentee.

The children were encouraged to consult other sources before beginning to write, and to make outlines as frameworks for the organization of the material gathered from the different sources. Those children who had most thoroughly assimilated the information produced the most original papers in arrangement and phraseology.

I. DOING AS A PROCESS OF LEARNING

B. Knowledge Applied to New Situations

Not only are exact repetition and mere reproduction not to be relied upon, but reorganization of the same material is not enough. Whenever we attempt to illustrate "repetition for the sake of retention" we find it merging into an instance of "knowledge applied to new situations." It is because learning demands that thought be concentrated upon the facts to be learned that fresh applications of these facts insure their acquisition better than mere repetition. The new situation, for the very reason that it is not habitual and automatic, secures the attention requisite for impressing the facts.

Arithmetic Problems of Vital Content

Perhaps in no other school subject is it so difficult to maintain a satisfactory procedure in this respect, to avoid the isolation which greatly reduces the effectiveness of the hours spent on mechanical drill, as in arithmetic. It is quite impossible to secure all practice by means of problems which are of vital interest to children and which originate with them. It is possible, however, to avoid harboring in our minds or instilling into the children the attitude that prob-

lems are just made up as good practice, the answers being of no significance to anyone after they are found. The task devolving upon the teacher of constructing and arranging problems which shall afford adequate application of principles, at just the time needed, by means of situations such as will confront the child in life, which shall indeed prove an introduction to life in its quantitative aspect, is a heavy one indeed.[3]

But it is not only the content of the problem that is important. It is quite possible to present long lists of drill problems, the subject matter of which is of vital importance, but the form of statement so similar that there is no need of selection from past information to meet the new conditions. All can be solved by one rote method, and the subject matter fades out of sight. Such procedure affords little training in thought.

In so far as possible, every problem should be an exercise in marshaling one's forces, a selection and assembling of abilities acquired in different combination, and a focusing of them upon the new situation. This selection and application do not just go off of themselves. Recognition of the necessity for such procedure has to be definitely developed. Children will sit down before a new problem, all the elements of which are familiar to them, and declare that they cannot do it because they "never had that kind yet." They have to be encouraged and even compelled to examine the conditions and discover what there is in their storehouse of previously gathered data which can be organized anew for a solution. Frequently it is desirable to have some elements omitted in order that the children may recognize the need

[3] For aid in it, consult Thorndike, Edward L., *Psychology of Arithmetic*, The Macmillan Co., 1926; Schorling and Clark, *Modern Mathematics—Seventh School Year*, World Book Co., 1926; and McMurry & Benson, *Social Arithmetic*, Macmillan, 1927.

of supplementing the data before beginning to calculate. For example, the geography textbook states that the population of Manhattan is the densest in the world. How does it compare with that of London or Chicago? Here area and population must be looked up before solution can proceed.

A Fifth or Sixth Grade may have had considerable practice with the area of rectangles in real situations, diagrams, etc., and still see nothing out of the way in the following:

"This elevator is too small. It ought to be twice as big."
"You mean twice as long and twice as wide?"
"Yes."
"It holds about 35 of us now. How many would it hold then?"
"Why 70 of course. That's a second grade problem."

On another occasion a child in the elevator remarked that the operator must ride a great many miles in a day,

"What would we have to know to find out how many?"

It seemed obvious that the operator would have to be asked to keep some record of the number of trips made, full and partial, and this he agreed to do.

Certain children, probably with recollection of past omissions, asserted:

"It would have to be reduced to miles."
"But what would have to be reduced to miles?"
"Why, the height of the building."
"How is the height of the building to be obtained?"
"Look at the plans." (These had been loaned somewhere outside and were not available.)
"Ask the architect." (He was in Europe.)
"Measure it."

Which several children did from floor to ceiling on each floor, with allowance for the thickness of the floor.

About this time one child had learned from an older brother that in the Seventh Grade book there was a description of getting the heights of unapproachable objects by triangulation. A series of lessons followed dealing with this new topic which combined many familiar principles.

The geography teacher might explain with utmost thoroughness the "scale of miles" [4] line on a map, and children might do much scale drawing and still not have it occur to them to use this scale line as an instrument to determine a desired distance. It is the idea of the application of known data to new situations which has to be deliberately taught as a conscious method of study.

In one Sixth Grade, this and other ends were attained by means of a series of parcel post and express problems. The children were going to send a package of Christmas cards to a southern school for less fortunate children and a large box of used clothing to a relief station at a shorter distance. How were these to be sent?

Printed lists of mailing rates and zones and the schedule of express rates were obtained. The geography books were opened to a large map of the United States. As the result of suggestions from teacher and pupils, long strips of paper were prepared and upon them were marked off again and again the scale of miles from the bottom of the map. These strips were then directed from New York to any desired spot in the country. The distance thus obtained, and the zone looked up, it was found necessary to weigh both boxes. After this, the cost of transportation both by express and freight was calculated, and the class was in a position to decide intelligently the better means to select.

Great delight was shown in these lessons. For days the

[4] P. 224.

children brought in questions regarding personal Christmas parcels to friends in various parts of the country and many were made up just for fun. The motivation of this exercise had been a practical and immediate need. Certain facts were learned regarding parcel post and express. There was some drill in computation. Map scales became real tools. But the essential value of the experience was a certain familiarity with the selection from a mass of accumulated data of just those portions which could be made to fit a given situation.

After a certain Seventh Grade had studied about the rainfall in various sections of the country and had learned to read a real rain gauge and to construct more primitive substitutes, someone suggested the computation of the amount of water fallen upon the school roof in a certain rainstorm. Area, volume, reduction of cubic inches to gallons,—all made their contribution to this solution.

Graphs

The graph has come into such common use for clarity and brevity of illustration in lectures, magazines, and books, even in many an advertisement and prospectus, that children must be given a clear understanding of the principles of graphical representation if they are to be prepared to make use of the source material about them. In common with many other schools, we have instructed our Sixth and Seventh Grades for several years in the making of the more common forms of graphs, the methods developing out of the experience and investigation of the teachers. The recent Schorling and Clark text has made the whole matter much more comprehensive. The subject has advanced beyond the instruction stage where the class makes a graph

of a certain type as assigned for a given topic. Long lists of possible graph subjects are posted from which the children choose, deciding for themselves which form of graph will best serve the purpose of representation. Entirely free choice of subjects at first often leads into useless channels. Such a posted list might include the following:

Average length of life today in the United States compared with other countries.
Increased length of human life by centuries.
Average daily number of sick persons per 1000 in India, Spain, United States, and New Zealand.
Depth of the Catskill aqueduct under the Hudson compared with the Woolworth Building.
Aëroplane ascensions compared with mountain altitudes.
Growth in population of U. S. A. from 1790 to 1920.
Growth in population of New York City, 1790 to 1920.
Length of ships from the British coracle to the "Majestic."
Available timber supply of the United States by regions.

We had not realized, however, how fully the graph had become an integral part of the children's equipment until they began asking for permission to make graphs in their "special topics," explaining that in no other way could they make certain points as clear.[5] Out of the twenty children in one Seventh Grade, seven used the graph in this way at their own suggestion, the subjects thus illustrated being:

Illiteracy Outside the United States
Railway Mileage of the World
Causes for Child Labor
Distribution of Acres for Schools
Ownership of the World's Ocean Cables
Ownership of the World's Telephones
Child Labor

[5] See chapter on "Organization of Data," pp. 86–106.

Outlines

When children have learned in connection with one body of subject matter, say history, to make outlines, they are pleased to use this new tool in working with other material. After one Seventh Grade had read *The Great Stone Face*, they were told to prepare to give a summary of the story for the benefit of one who had been absent during the reading. The teacher suggested that each child make notes in the form of an outline to be used as a guide in giving the summary. She graded the notes, arranging them in three groups—excellent, average, and poor. She then selected one paper from each group. The next day she sent out of the room the writers of the three papers, giving them some special work to do. They did not know what was to take place in the classroom, and being fully occupied, had little time to wonder. One at a time each was called in to give the summary. The class then passed judgment on the summaries. They were greatly interested when they found that they had graded the summaries exactly as the teacher had graded the outlines. The experience gave them a greater respect for the outline as a useful tool.

The proof of the mastery of a tool comes when children use it voluntarily and as a matter of course, as in the lesson on the study of the Plateau States already cited in the chapter on "Stimulating the Questioning Attitude of Mind."[6] The children were to study from their geographies with two questions in mind. 1. "Why are there so few people there?" 2. "What are the occupations of the sparse population?" The answers were to be in writing. Many of the class, without suggestion from the teacher,

[6] P. 16.

organized this data in outline form, this being the new tool just acquired in connection with their history work.

II. DOING AS A TEST OF LEARNING

Examinations have been relied upon from time immemorial as tests of assimilation, but within a few years there has been a very marked change in the character of examinations. Less and less are they devised merely to reveal a pupil's knowledge of facts, and more and more to test his "ability to handle material in a practical and even original manner." [7]

The recitation period is frequently devoted to testing the knowledge acquired in a previous study period. Children quickly learn what kind of questions they are to expect from a particular teacher and prepare their lessons accordingly. Where question after question simply tests knowledge of facts, children will study facts without taking the trouble to see whether they understand and can use them. If, on the other hand, they know that the teacher will expect them to be able to discuss situations, to give reasons which they understand and have not simply memorized from a list in the book, to ferret out causes, and to apply their knowledge to new situations, they will be mindful of these things while studying and will realize that their study is not completed until they can use the ideas gleaned from the assignment.

In such a recitation, the teacher must not take too prominent a part. Children must feel free to discuss with one another, not waiting always for a question or comment from the teacher. They may simply "get the floor" from the teacher who presides over the meeting. Such a recitation period is described by Dr. Dewey as follows:

[7] Hall-Quest, Alfred L., *Supervised Study*, p. 219. The Macmillan Co., 1923.

The recitation becomes a social meeting place; it is to the school what the spontaneous conversation is at home, except that it is more organized, following definite lines. The recitation becomes the social clearing house, where experiences and ideas are exchanged and subjected to criticism, where misconceptions are corrected, and new lines of thought and inquiry are set up.[8]

Standard Tests

A type of examination unknown twenty years ago and now found in every progressive school system is the Standard Test.[9] When this new instrument was suddenly thrust into our hands many of us regarded it with suspicion, for the very reasons suggested in the preceding paragraphs. The emphasis being placed by these tests entirely upon formal processes, both teacher and pupil would be led thereby to lay prime importance upon those processes, while the purpose for which they were acquired would be forgotten.

We now realize that so to argue is to misconceive the entire Test Movement. A large part of children's time must be given to the acquisition of tools,—yes, but how large a part? Is there no limit? Shall acquired skill be but an introduction to more skill? Or is there a degree of perfection which is enough for practical purposes at a given age?

It is the affirmative answer to the last question and the means afforded for determining the requisite degree of attainment which is setting many children free from routine drill on formal processes and affording them the opportunity for handwork, art projects, research in social studies, and the like.

There is nothing either good or bad in a tool itself. Pro-

[8] Dewey, John, *School and Society*, p. 65. University of Chicago Press, 1899.

[9] Monroe, DeVoss, and Kelly, *Educational Tests and Measurements*. Houghton Mifflin Co., 1924.
McCall, W. A., *How to Measure in Education*. The Macmillan Co., 1922.
Freeman, Frank M., *Mental Tests*. Houghton Mifflin Co., 1926.

ficiency in reading may be employed to gather inspiration and wisdom from the world's best literature or to read "yellow journals." Facile penmanship may contribute to a literary masterpiece or to forgery. Arithmetical accuracy is the tool of the statistician and scientist, or of the clever crook. The use which our pupils make of the tools we give them depends upon many things, our own moral influence and example most of all. But it is essential that a certain proficiency in their use should be attained. If a given class does not measure up to standard in any of the processes, greater attention is demanded for that process.

On the other hand there is tremendous security and relief in the demonstration that one's pupils rank well by standards obtained from children of the same age widely distributed. If a child's speed and accuracy in the measurable, formal process subjects equal or surpass that attained by 50% or 75% of children of his age, then he may safely cease to strive for the speed of a lightning calculator or for a minute detail of factual knowledge beyond the practical, and devote himself to the vital applications of these tools.

Furthermore, there is great value in the objectivity of these tests. An examination set by the teacher of a class will of necessity be graded subjectively; that is, her opinions will determine her estimate of correct or incorrect. This has its own advantage while she is trying to direct the class in certain trends of thought. The standard test, on the other hand, marked by a key, is absolutely impersonal and objective, thus affording far safer criteria for the evaluation of exact, definite processes.

Weather Forecasting

A very interesting and valuable exercise in testing acquired knowledge is afforded by weather predictions.

These have been used in the Seventh Grade. First the barometer is explained and demonstrated and reading it becomes a familiar experience. Then the government weather maps are introduced and forecasting explained. These maps are posted daily by a committee which arranges them carefully so that when a storm is in progress its advance across the United States can be traced.

After this, as a test of their understanding of "highs" and "lows," the children try forecasting from the data available to the weather man. A set of weather maps in series of three or more successive days is handed to each child. The forecast printed at the bottom is cut off and retained by the teacher. The job is to lay out the maps, observe the progress and direction of the "highs" and "lows" and their rate of speed, and then judge what the weather condition would be in New York twenty-four hours later, just as the weather man had done. They work in pairs, discuss their problem, make their decision, write their forecast and check it by the official prediction. Usually no record has been kept as to whether the official forecast had been correct, but they know that it is right in a large proportion of the cases and, accepting it as the criterion, eagerly rush to the teacher's desk and compare their results with it. Then they take another series of maps and so make their forecasts again and again.

Sometimes a committee volunteers to keep a weather record and try real forecasting. Using the weather map and taking daily barometer readings they make their forecast and, comparing it with that in the daily papers, watch anxiously to see which is correct. They prove sometimes correct and sometimes not. Since the weather map does not reach them until twenty-four hours later everybody

recognizes that they do not have adequate information. The greatest benefit from this experience is practical demonstration of the fact that correct judgments depend upon correct and complete data.

Sand Table Demonstrations

A geography class had read about the injury to the country which results from cutting down the forests. There had been considerable discussion. "Do you suppose," said the teacher, "that you could prove to me that you understand this by working out the principle on the sand table?" Several very glib talkers looked quite mystified. A small group thought that they could, and they worked at the project for several days. When completed the demonstration was considered a great success. There were two hillsides with a small sloping valley between. One hill was covered thickly with excelsior to simulate forests, the other was bare. Two pails of water were provided. One child poured all the water from one pail, a pitcherful at a time, into a funnel stuck into the tube end of a bath spray. Other children moved the spray back and forth over the forest-covered hill until the pail was empty. The water soaked into the sands of the hill and very little ran down into the valley.

Then the other pailful was sprayed in the same manner over the denuded hillside. Very little soaked in, the valley was soon flooded, and the miniature hill practically all washed away.

Dramatization

The children's natural love of dramatizing is utilized in many ways, perhaps most often as a goal to entertain other

classes.[10] If it is used as a test of the appreciation of a literary unit, as it not infrequently is, the children must be set free to work out their own plans. The resulting production may be cruder than if they were carefully supervised, but the value to the children will be greater where such freedom is given. Sometimes real talent is discovered under these circumstances, which had never been suspected by the teachers.

A certain Seventh Grade wanted to "give a play." They had no particular play in mind. There was surplus energy demanding an outlet. They wanted to do it "all ourselves." A committee was put in charge, one member appointed by the teacher, two elected by the class.

A number of plays were read and rejected by the committee. Finally they chose *Rip Van Winkle* as played by Joe Jefferson. (They had been reading Irving's story in literature class.) They cut the text to a suitable length, typed the parts and "tried out" for characters.

When the principal actors had been selected, they were left with the committee to rehearse alone, while the rest of the class had regular literature lessons with the teacher. Whenever these children were needed to take the parts of villagers in rehearsals, they were released. The teacher looked in upon a rehearsal occasionally, but gave no advice unless it was asked, which was not often.

The committee's choice for Rip was a complete surprise to the teachers, a serious lad, one often appointed to fill important positions in the class government. His impersonation of Rip was altogether charming, showing a thorough understanding of a nature quite different from

[10] Consult Chubb, Percival, & His Associates, *Festivals and Plays in School and Elsewhere*. Harper Brothers, 1912. Mr. Chubb was at one time head of the festival work in the Ethical Culture School, New York City.

his own. The committee's choice showed, on their part, an appreciation of the secret of this boy's power as a leader, his innate sympathetic understanding of human reactions. The harassed wife, the sweet young daughter—indeed almost all of the characters—were well chosen.

The rehearsals proceeded, not without friction and unnecessary delays. Several times the manager forgot to notify the teacher that a rehearsal was desired. The teacher, having planned other work for the period, could not allow the rehearsal to take place. Finally a new manager was chosen, and the work proceeded more smoothly.

There were a number of practical difficulties to be overcome. There is no stage. The furniture and walls of the classrooms being all moveable, so that classroom space can, at a moment's notice, be converted into playground, it is difficult to manage stage properties and costumes, and these must be reduced to a minimum. When a play is in progress, the action takes place in a space set off by the large screens which during school periods form the back wall of classrooms. The teacher's desk may be a table, a fireplace, a cupboard. Homemade contrivances of one kind or another complete the scenery.

In this instance, a group of boys made a window frame which, set on a chair and held securely between two screens, was very effective. Through this Rip entered, surprising Gretchen in the midst of her revilings against his character.

One boy arranged electric apparatus in such a way that very realistic lightning was flashed, whilst thunder pealed from behind the scenes, as a classmate beat upon an empty keg.

Very few of the actors were in full costume, some one symbolic article sufficing in most instances. The dwarfs wore peaked hats with drooping plumes. One boy devised

and made wire frames for all the hats. The girls asked to be allowed to cover these frames under the supervision of the sewing teacher and she gave them class time to carry out the project.

Some of the village men smoked pipes, made by one of the boys. The bowls were sections cut from large dowels, the stems, pieces of smaller dowels. A white cap and apron was adequate symbolism for a village matron. Rip, Gretchen, Meenie, and Hendrick were more fully costumed.

When the teacher felt that the rehearsing had reached the stage of "diminishing returns," she suggested that it might be well for her to attend a full rehearsal. The children welcomed the suggestion. They were not satisfied with the way things were going, but as someone said "The oftener we rehearse the worse it gets, and we all get to squabbling." With the teacher present, the rehearsal went more smoothly. She suggested a few changes. Once more they rehearsed alone, once more before the teacher, and then gave this play to the other classes in the Department. It was an extremely interesting performance. Much of the acting was excellent, and the stage setting and the costumes produced a more artistic whole than might be supposed from the foregoing account.

III. DOING AS THE GOAL OF LEARNING

Knowledge which the children *spontaneously apply* to practical situations and knowledge which gives the pupil so much pleasure that he wishes to use it to give pleasure to others has reached the stage of "spiritual nourishment." The child who, after a literature lesson, asks to borrow the book of poems from which the teacher has been reading, and comes the next morning prepared to recite a poem to the class is making a truly social use of his knowledge.

An even greater degree of assimilation is shown in the cases of children, inspired by poems read to the class to write poems of their own and bring them to be shared by their classmates and teacher. Two such spontaneous outpourings are given below. The first, written by a Seventh Grade girl, was suggested by Burges Johnson's "Goin' Barefoot," [11] which ends with the couplet,

> An' I'm surely goin' barefoot every day when I get old
> An' haven't got a nurse to say I'll catch my dethocold!

MY DETHOCOLD

When I wuz a lil kid
Not more'n four years old
My nurse, she uster tell me
I'd ketch m'dethocold.

I hunted high and low fer him,
I haven't found him yet,
But when I do—right in the night
I'll kill him dead—you bet.

The second poem followed the reading of two sunrise poems, "Dawn in the Desert," [12] and "Prayer at Sunrise." [13] This also is the work of a Seventh Grade pupil:

A PICTURE

As the thin grey mist of the early morning
Rose over the lake
And the soft flush of the dawn
Appeared in the eastern sky,
An Indian canoe glided by,
In it an Indian brave, intent upon his hunting.

[11] Johnson, Burges, *Rhymes of Little Boys*, p. 8. *Woman's Home Companion*, Crowell Publishing Co.

[12] Scollard, Clinton, *Hills of Song*, p. 43. Sherman, French & Co., 1908.

[13] Johnson, James Weldon, *Fifty Years*, p. 46. Cornhill Publishing Co., 1921.

Oral Reading

In this connection another subject comes to mind. At this time when so much emphasis is being placed on silent reading as more useful to the pupils than oral reading, there is danger of overlooking the value of reading aloud as a social function. There is much talk nowadays of the passing of home life. Entertainment is sought outside of the home. The family circle gathered to hear some member read the news of the day, or some favorite author is the very rare exception. The school may do something toward reviving this wholesome custom by encouraging children to prepare themselves to read aloud so agreeably that their families will like to listen to them. There are many opportunities for children to read to their classmates material which they have chosen and the text of which is not in the hands of the others. If under such circumstances the reading is enjoyable, it may be suggested that someone at home might care to hear the selection.

Historic Appreciation

A very charming illustration of a child's recognition of knowledge as a source of pleasure is furnished by the letter given below, which was written by a child to her history teacher. Just before school closed, this child had made a special study of the Dyckman House, the colonial farmhouse preserved in New York City:

Dear Miss ——

I am in a little country town in Massachusetts, where we go every summer. We came up in our auto, and when we got to Pawling, N. Y. (about half way to Lenox) we stopped to have some ice cream at a little coffee house. I thought you would be interested in the little house because it looked so Colonial. The furniture is in Colonial style, (anyway it seems so to me) and it has rafters on the ceiling. They have a great big fireplace too, with a baby's cradle like the one

in the Dyckman House. But they have logs in the cradle instead of a baby. Then there was a big pair of bellows hanging up in the fireplace.

I've been in that coffee house many times before this, because we always have something to eat there on the way to and from Lenox, but I've never noticed the oldness before. I think that's because I never had Colonial history. You see how much it helps you notice things.

Ethical Expression the Highest Goal

Again and again, in one way or another, the children are confronted with the idea that study should "culminate in the *use* of knowledge," that "the worth of a man is determined by what comes out of him, by the service he renders, rather than by what enters in." [14] Literature, geography, history, civics, all furnish illustrations which emphasize this point. Most helpful of all is the work in ethics. The idea that the highest use of knowledge and skill is in social service pervades the lessons. In the Fifth Grade, much time is devoted to discussing the lives of "Benefactors of Mankind." Sometimes after they have been told about one such person, perhaps Florence Nightingale, Grace Darling, Dr. Grenfell, or Booker Washington, they are asked to bring in lists of people of whom they have heard who have used their knowledge and skill for the benefit of others. Such lists include physicians, nurses, ministers, educators, inventors, etc. The range is wide, as a few quotations will show:

"Charlemagne was a benefactor because he built schools to let hundreds of children learn each year."

"Joan of Arc was a great benefactor because she led the French Soldiers to battle."

"Abraham Lincoln freed the slaves."

[14] McMurry, Frank M., *How to Study and Teaching How to Study*, p. 198. Houghton, Mifflin Co., 1909.

"Edison was a benefactor because he made electric lights, telephones, electric irons, electric toasters, and other electric appliances."

"Mr. Carnegie———libraries."

As we discuss the work of these great people we try to see how we, in "little ways," can do the kind of things they did in "big ways."

Part of the time in the Sixth Grade is devoted to a study of the life of Moses and some of the commandments. Sometimes the story of his life is told rapidly with little discussion of the incidents, and then the children are asked to answer in writing the question "What incidents in the life of Moses do you think we might profitably discuss in the ethics class?" They are given to understand that they should select parts of the story which will furnish practical suggestions, ideas which *we may use* in our daily lives. Very helpful discussions grow out of the consideration of Moses before the Burning Bush, the man inspired by a burning desire to help his people. We look for modern illustrations and find ourselves reviewing the lives of some of the "Benefactors," and now think of them as aglow with the spirit of helpfulness. We add others, Jane Addams, Lillian Wald, Jacob Riis, Mahatma Gandhi, men and women who have stood before the Burning Bush, and are led by the "pillar of cloud by day, and the pillar of fire by night" in their service of humanity. Especially are we interested in men like Roger Williams, and Father Serra, whom we have met in our history. The connection is easily made as the same person teaches the two subjects. This fortunately is true in the Seventh Grade also, and the close connection helps to enrich both subjects.

Something can be done toward making children under-

stand that enthusiasm to do good which does not result in action is worse than wasted, that if Moses had stood before the Burning Bush, and then had failed to lead his people out of bondage, he would be unknown or known only as a man who had failed signally. And so we come to the consideration of our own inspired moments, of plans to do fine things, of plans unfulfilled, of promises broken, of the fact that only the things that we *do* count.

In the Seventh Grade most of the ethics lessons are devoted to consideration of various phases of citizenship. The connection between history and ethics is especially close. The year's history begins with the "Critical Period." We pass rapidly to the " Drawing Up of the Constitution " and the launching of the new government. The citizens' duties and privileges occupy our attention. Meantime, the papers are full of the political campaign. The primary election takes place, registration days come. Several ethics lessons are devoted to considering what a citizen should do in order to prepare himself to vote intelligently. The ideas are put to practical use in class affairs when officers or committees are to be elected. Constantly what we learn concerning adult citizenship is applied to "citizenship in the Seventh Grade." The children come to conceive of themselves as already citizens with individual responsibility for matters concerning their body politic.

The Seventh Grade pupil has reached the age when he is becoming more and more actively conscious of the world about him outside of home and school. He is beginning to realize that he must find a place in that social organism. He is curious as to the workings of the social units about which he reads in the papers, and which he hears discussed by his elders, but does not understand

clearly. He welcomes class discussion of such things, so we devote considerable time to current topics.

The children are encouraged to subscribe to one of several current topics leaflets especially prepared for young people.[15] At the outset, they are given the idea that material selected for discussion should have social value. Sometimes a list of subjects suggested by the pupils is read to the class, and a majority vote decides the one considered of greatest social value, and therefore most worthy of discussion.

The child who selected the following paragraph understood the citizen's duty to do the disagreeable service for the sake of the public welfare: "Do you approve? Ten business men were fined Two Hundred and Fifty ($250.00) Dollars each because they failed to answer the call to service on August grand juries."

At the beginning of the Eighth Grade year one class was asked to write statements of what ethics meant to them. A number of the answers showed that the writers appreciated that the goal of the lesson is *action, use* of the ideas developed during the discussions, as, for instance, "I think ethics makes you finer in your ways and doings. Ethics to me is the right and wrong of certain things, and it teaches us to live up to certain good morals."

Such an appreciation of the need to use ideas carries over and influences the children more or less in their studying of all subjects.

Very occasionally there is an opportunity for the children to use knowledge gained in school to actually help in some large civic project. Such an occasion is a red-letter day.

[15] *Looseleaf Current Topics*, 1123 Broadway, N. Y. C.; *News Outline*, 1123 Broadway, N. Y. C.; *World News*, Munsey Building, Washington, D. C.; *Weekly News Review*, Washington, D. C.

One Seventh Grade had the rare privilege of utilizing their knowledge of graphs in the interest of a philanthropic cause. Their "doing" was truly "the goal of their learning." A member of the National Child Labor Committee spoke before the school. The children were inspired with a desire to give practical assistance. The office of the Committee was visited and various possibilities were discussed.

The committee needed a graphic device to send out with their speakers to show the audiences the great percentage of illiteracy in the United States as compared with that of the leading countries of Europe. "Could the school children make some such device for them?" The children were delighted with the idea. The committee furnished us with the percentages of illiteracy and the class worked out a bar graph. The illiteracy bar for the United States needed to be 25 feet 11¼ inches long as compared with Prussia's illiteracy bar of ¼ inch. Clearly it was impractical for a traveling speaker to carry a graph of such dimensions! So it was decided to make the bars of ribbon which could be wrapped around a small chart and unrolled before the audience.

This chart was so effective that the National Child Labor Committee asked this grade to make similar charts to show the percentages of illiteracy and child labor among children from ten to fifteen years in different sections of the United States. This graph the committee used in the South in its campaign for better child labor legislation.

CHAPTER VII

SELF-EXPRESSION THROUGH ENGLISH COMPOSITION

> Truth is within ourselves; it takes no rise
> From outward things, . . .
> . . . and to know
> Rather consists in opening out a way
> Whence the imprisoned splendor may escape,
> Than in effecting entry for a light
> Supposed to be without.
>
> BROWNING, *Paracelsus.*

Since the chief aim of our work in composition is to furnish opportunities for the children to express their own thoughts, their individual reactions to matters presented to them, it seems as if there might be danger of defeating our own ends if we should stress definite methods of procedure. And indeed we must not demand too strict conformity to hard and fast rules or we may kill initiative, dull imagination, and cause a dislike for all creative work. However, there are certain principles which must be followed, consciously or unconsciously, in the production of any literary creation. It is desirable that by degrees the children be made conscious of these principles and trained to follow them in their independent work.

First of all, as in other cases, the children's interest is aroused by giving them specific purposes fitted to their mental and emotional capacities and as often as possible related to life. The children know that everything of merit which they write will be submitted to the class and this

insures their greatest effort. Books are reviewed, not to please the teacher, but to make the class want to read the books; dramatizations and puppet shows are given to the class and to other classes; ghost stories and fairy stories are written to please their classmates; letters, except one kind, noted below,[1] are never written unless they have a practical purpose and are to be sent. Thus the children are provided with adequate markets for their products.

In so far as possible the teacher follows the children's lead in the choice of subjects. Whenever the children express a desire to write on a certain subject, or what is more usual, to write a certain type of composition, they are given an opportunity to do so; and whenever the teacher proposes the subject, she submits it to the class and takes her cue from their reactions as to whether it appeals to them or not.

A subject having been decided upon, the children are encouraged to make suggestions which are criticized by the class and the teacher. Seldom is less than a forty-minute period used for this preliminary discussion and working up of interest. The idea is that the children should be saturated with the subject and filled with ideas until they are bursting with interest and eager to begin.

It is evident that during this period not only has an aim been made clear, and interest aroused, but also considerable data have been gathered with which to work toward the accomplishment of the aim.

The child of marked literary ability, or the child of only ordinary ability for the nonce extraordinarily inspired, may do his best work if allowed to proceed without further assistance. For the most part, however, children need to be reminded to make a definite plan before beginning to write, in other words, to organize their data. It may well be that

[1] P. 208.

the initial lesson did not supply all the data needed. Then the child must gather more, either by searching his past experience and setting his imagination to work, by reading, experimenting, observing, or by a combination of methods.

When finally the child comes to organize his data, plan his story or play or what not, it may be necessary to elaborate certain points and eliminate others in order to produce a well-balanced literary unit.

Whatever the teacher can do to enable the child eventually to thus gather and organize data, and to work them up in the best style which he can command, criticizing his own work before submitting it to her, may be considered teaching him to study.

We shall not attempt to represent all types of composition, in logical order, as would be necessary for a discussion of the curriculum. Rather we shall tell in considerable detail just how certain lessons have been conducted. The topics selected fall into three groups. Exercises in which:

I. Specific data are given.
   A. Reproduction of Historic Events and Geographic Situations.
   B. Book Reviews.
   C. Description of Familiar Scenes.
II. Data are collected by the pupil from various sources and fused by him.
   A. Current Topics.
   B. "Juvenile Theses."
III. Conditions are suggested, data coming largely from pupil's past experience, that is, imaginative writing.
   A. Personification.
   B. Identification.

Before discussing any illustrations of the different types of lessons cited above, it may be well to consider briefly the

question of *oral composition.* The term *composition* commonly connotes only written productions, but this is an unfortunately narrow interpretation of the word.

Many an academically trained adult expresses his thoughts and feelings more easily with a pen than with his tongue. Such facility is acquired slowly and laboriously, however. The chatterbox of eight or ten whose tongue is proverbially "loose at both ends," and who wants to talk all the time frequently has little that he wishes to say through the medium of cramped fingers, crooked letters, and thought-sidetracking spelling. Many a worth while childish thought is lost because there is no wise mother like Hilda Conkling's to take it down, leaving the child unburdened by the difficulties of writing. Some children, prolific of ideas, fail absolutely in written composition. Often they are able to dictate excellent productions to mother, teacher, or classmate, and a year or two of such help until the mechanical difficulties of writing have been to some extent overcome swings them into line among the best in their class in written contribution.

However, the voluble prattling of youngsters requires direction. Their colloquial vocabulary is often meager. Such words as "thing" and "fix" serve as synonyms for a surprising number of words. Narratives are repetitious, descriptions confused. But the exuberance of spontaneous speech affords opportunity for training far beyond that of repressed, stiff, written language.

For these reasons, oral composition is of the utmost importance. Yet it is really startling when one considers the scanty opportunity for real oral expression which is afforded by schools to each member of a class of twenty-five, or thirty, or forty children. Scarcely voiced greetings, monosyllabic affirmative or negative answers, brief statements of

facts or slightly longer contributions to discussions constitute most children's practice in spoken English during school hours. But every few days they are expected to write some pages of consecutive discourse with all the mechanical difficulties of this highly artificial mode of expression. Children who have told stories to their classmates are thereby trained in many requisites of written stories, while descriptions and explanations are more apt to be made clear if reflected in the faces of eager, critical listeners than if merely committed to paper as cold words. Throughout our grades a great many opportunities are given for such exercises in oral expression. A few illustrations are here cited.

In the early fall, the children are asked to tell of their summer experiences, or to describe natural scenes, views which they have added to their "mental picture galleries." Animals are an inexhaustible source of interest. True stories about them, experiences with them, are always on the tongue's end.

Often during the early days of the school year, the Sixth Grade pupils are asked to practice explaining the rules of basketball until they can make the Fifth Grade understand the conditions of the game, for it is seldom that children can impart knowledge of even well-known facts to other children. These recitations are always carefully prepared in advance, usually in study periods with the teacher available to answer individual questions. Sometimes a whole period is spent thus.

I. SPECIFIC DATA GIVEN

A. Reproduction of Historic Events and Geographic Situations

Of reproduction pure and simple very little is given in the English class. In connection with history and geog-

raphy, there is more or less demand for restatement of facts in the pupil's own words, as a test of assimilation and for the sake of increasing the chances of retention. Most of these reviews are given orally. One illustration will suffice.

A certain Fifth Grade had been learning about the invention of printing and had constructed a press on the Gutenberg model. One of the boys explained it about as follows:

"First there didn't use to be any printing presses and people just wrote like we do (a deep swallow) and the monks wrote (swallow) and they lived in the monasteries and so they wrote (swallow) and it kept going on and so after a while they thought they had better print. But they didn't know how yet (swallow) so they kept on writing and after a while a man named Gutenberg made this printing press and I'm going to explain it to you (swallow) . . . He made it in the shop (awkward shifting of position). It was in 1439. And he made wooden types but they have lead ones in the big printing presses now. See you put the paper in there and press down like this and it prints and they didn't know any printed letters like us, so the monks kept on writing and Gutenberg whittled out the wooden types just like the monks made them but to-day we have written letters and printed letters."

The class was at once agog with suggestions, for the explanation was to be given to another grade and must be clear:

"Joseph mustn't duck his head and swallow all the time."

"He must think about it, till he won't say, 'It kept on going,' and 'They kept on writing,' just to fill in."

"He said Gutenberg made that printing press and then he said the class made it. It would get the children all mixed up."

"When you're explaining a printing press you don't want to tell about monks."

Finally another child was chosen to give the explanation. Profiting by the criticism of Joseph's blunders, he gave a smoother discourse.

While, as was stated above, most of the review exercises in history and geography are given orally, some are written. When, occasionally, something rather long and elaborate is desired, the English teacher is asked to coöperate. An instance will be considered.

On one occasion the Sixth Grade wrote a detailed account of "How America Came to be Named" for the benefit of some Seventh Graders who had forgotten the details. The history teacher reviewed the story, talking very slowly in order that the children might take notes to be used when writing their papers. The notes were checked up before the matter was turned over to the English teacher.

As this was to be a lesson in accurate, detailed reproduction, the teacher was on the lookout for inaccuracies and vagueness of expression, which would render the account useless to the children for whom it was being written, and would show that the writers had not really assimilated the material.

Some children realized their inability to express themselves and came for help. Leading questions were often all that was needed. In other instances it was obvious that the child did not understand what he was trying to express. Then it was suggested that he reread the section, and restate the ideas in his own words, trying to keep in mind an audience who had never heard the story before. He was told to ask himself questions, as, for instance, "Could they understand what I have just said, without knowing that fact which I have omitted?" This idea of writing with the audience in mind is often very helpful.

The finished products of course revealed the fact that certain children had not realized the vagueness of their expression, and that they needed still more specific aid.

The way that such an instance was dealt with is taken up later on.[2]

I. SPECIFIC DATA GIVEN

B. Book Reviews

In reviewing books, the pupils are also dealing with data that are given them, but the task requires more discrimination than the simple reproduction already described. The question, "What have you been reading lately?" never fails to arouse enthusiastic interest. All the children are eager to tell. Many books are named. The teacher then asks that each child prepare a talk on some book which he would recommend to his classmates. She suggests the following outline:

1. Give name of book and author.
2. Tell where and when story takes place.
3. Name the chief characters.
4. Tell in detail about one interesting and unforgettable incident.

The purpose of the lesson as given to the children is to make the book so interesting to the class, without telling all about it, that many pupils will be induced to read it. The children are allowed sufficient time to plan their recitations and to think them through word for word, preparing good complete sentences and avoiding too many *and's but's, so's, then's*, and *well's*. A time limit is not set for Sixth Graders but they are urged to be brief rather than lengthy. This is done to insure good planning. The child who, when called upon, rambles on and on without plan is not allowed to finish. Those who wish make notes which they use when reciting; the teacher advises this method. When all questions of a general nature have been answered, the children work quietly and are not interrupted during the

[2] See p. 178.

rest of the period. Further questions are answered individually at the teacher's desk.

The criticism which follows each recitation calls for much exercise of judgment on the part of the children and careful direction by the teacher. Appreciation, first of all, is demanded. When the lesson in book reviewing is first given to the Sixth Grade, it goes somewhat after this fashion:

TEACHER: What did you think of that recitation, Ruth?
RUTH: She said "er-er-er" all the time.
TEACHER: I didn't notice that particularly. What did you think about it, John?
JOHN: She said "isn't" for "aren't."
TEACHER: Did she? Well, even so, those are small mistakes, aren't they? What did you think of it as a whole?
(No answer)
ARTHUR: It was too long.
TEACHER: What do you think she might have left out?
(No answer)
TEACHER: Now, let's start again. Let's tell what the recitation *was*, not what it *wasn't*. Who is ready to tell one thing that it was?
SUE: The ending was good.
TEACHER: How many agree with Sue? Yes, I think so too. And I think the whole of it was *very* interesting.
(Murmur of agreement from class)
TEACHER: How many agree with me? (Many hands) Well, now, why didn't you say so? What made it interesting?
GEORGE: It was very exciting.
TEACHER: Yes. The story itself was a good one. But how could she have avoided repeating so many times "And then they decided?"
PHILIP: She could have had them talk to each other about what they were going to do, and then they could have done it.
TEACHER: Yes. How many of you like to see a page of conversation in the book you are reading?
(Many hands)

TEACHER: We all like conversation sprinkled into our stories because it makes them more interesting. Now, there were some mistakes in English that hindered our complete enjoyment of the account. A few have already been mentioned. What were some of the others? etc.

After a few lessons of this type, the children learn to note first of all what there is good about the recitation, and then what is poor and how it could have been made better. The teacher never allows all mistakes, if there are many, to be brought up because this would discourage the child who recites, and encourage unfavorable criticism on the part of all. And moreover, the teacher's aim in this lesson, besides the desire to train the children in the right kind of criticism, is to make them realize that some matters are important and others relatively unimportant. The poor pronunciation of "going to" is not as serious as beginning sentences over three and four different ways before finishing them.

A later lesson of this kind goes something like this:

TEACHER: Well, what did you think of that recitation?

MARY: The story wasn't very interesting, but he told it so well that you had to listen.

TEACHER: How did he do it?

MARY: He didn't have to stop to think what he was going to say and he had a lot of conversation.

TEACHER: You said the story itself wasn't very interesting. Has anyone anything to say about that?

JOSEPH: I've read that book and I like it very much. I think if he had told the incident about————instead of the one he did, it would have been more interesting.

TEACHER: (To the child who recited:) What do you think of that suggestion?

CHILD: I think the one I told is more interesting.

TEACHER: (To Joseph:) Tell the incident you have in mind and let the class judge.

(Child tells it. Class decides that it is the more interesting of the two.)

Thus the child who has recited is shown that he did not use the best judgment in choosing his incident.

After giving a little time to the most frequent and serious English mistakes that the child has made, the teacher continues the lesson. The pleasure that comes to the one who is able to hold the interest of the class all the while he is talking is reward enough, and the dissatisfaction of the one who fails is punishment enough.

I. SPECIFIC DATA GIVEN

C. Description of Familiar Scenes

Once a Sixth Grade wrote letters to a boy, a friend of the teacher's, who lived on a sugar plantation in Louisiana, and had always been tutored because there was no good school near his home. It was thought that an account of school life would interest him, as would also a description of the big city of which he knew little. The children hoped in return to receive from him letters giving information about his life on the southern plantation.

The pupils suggested subjects which might be of interest and the teacher wrote the list on the blackboard. A trip around Manhattan Island, just previous to this lesson, supplied many topics. Each child then chose a subject or subjects and planned his letter.

This project afforded more opportunity for originality than the narration of an historic incident or than the book review described above. The children were all dealing with actual facts which were to be reported accurately, but there was no set pattern, as in the case of the story of Amerigo Vespucci. Those who chose descriptions of the school

environment had all their data at hand. They needed only to organize it before beginning to write. But some of those who elected to contribute to the composite picture of the city, had to go in search of data, in some cases gathering from various sources and combining. In those cases the project would be classed under the second heading, in the outline on page 155.' "Data collected by the pupil from various sources and fused by him." The child who told about the Woolworth Building, visited it, and secured a guidebook. His personal impressions, supplemented by statistics gathered from the guide, made a vivid and accurate account. The one who chose to tell about shipping, wrote a letter to one of the steamship companies whose boat she saw lying in dock when she sailed around the Island. She received information about trips, cargoes, etc. The subject, "Islands in the East River," necessitated a careful study of the uses of these islands. In these and other instances, facts were gathered by the children and written up with a decidedly personal touch. The facts were checked up by the geography teacher and inaccuracies corrected by the children before the letters were sent.

II. DATA COLLECTED BY THE PUPIL FROM VARIOUS SOURCES AND FUSED BY HIM

A. Current Topics

A number of times during the Seventh Grade year, the children are given as an English assignment the preparation of a short talk on some current topic. Each child is free to choose his own topic. He is expected to state the problem or proposition clearly, and to give as many facts as he can marshal concerning it. If the subject is one about which he has an opinion he is to state it.

In the early part of the year many of the talks prove unsatisfactory to the pupil-audience because they are too meager or too one-sided, or are not clearly expressed. A typical recitation given in October, 1925, proceeded much as follows:

A talked about prohibition. The class criticized her recitation because it was all personal opinion against prohibition and contained not a single fact to substantiate her view. They were not convinced by her.

B had chosen the subject of immigration. All he did was to state the quota law in per cents, giving no idea as to how many people are allowed from any one country. He did not tell of reasons for restriction, or give arguments, pro or con. The talk was considered most unsatisfactory.

C gave much the same kind of talk about the French debt situation. She stated how much money France owed the United States, that she claimed she could not pay it until Germany paid her and that a commission had come to this country to settle the matter, but she knew nothing of what had been done here. The class was not satisfied with the amount of information given.

D spoke on the anthracite coal strike in a most confusing way, because, as he admitted frankly, he did not understand it himself. It was scarcely necessary to point out to the class that the first requisite of a clear explanation is a clear understanding of the subject to be explained.

E talked about the Hopi Indians. She stated how many of these Indains there are now, and noted the fact that they have scarcely doubled in number during the last one hundred and nineteen years because they are so susceptible to the white man's diseases. She said that they are not properly cared for by the government. The Navajos are

allowed to take their land from them while they starve for lack of it.

She told how the whites wished to suppress their dances, especially the Snake Dance. "I'm sure," she said, "if we stop to think of it, we'll realize that these dances can't seem any worse to us than our dances seem to them. They must think the way we dance, men and women together, isn't nearly as natural as the way they dance, because it's really quite natural to want to jump around more freely and make a big noise the way they do."

This girl's recitation was completely satisfying to the class. At the end of the period the teacher summarized as follows the points to be remembered in preparing for such a recitation:

1. A clear understanding of the subject to be presented.
2. Adequate number of facts, representing all sides of the question.
3. Orderly arrangement and clear statement of these facts.
4. Evidence of a sympathetic understanding of the situation.

The first point did not need to be emphasized.

In connection with the second point, the teacher called the children's attention to several magazines and papers, giving some characterization of each one, the point of view to be expected in that publication.

In discussing orderly arrangement of facts, she reminded the children of the value of notes as guides.

In connection with the last point, their attention was called to the fact that at no time did *E* say "I think" or "I don't think," but that she made them all agree with her by the facts she produced and by her sympathetic understanding of these facts. The teacher emphasized the importance of such understanding and reminded the children that it is possible only when one puts one's self in the other person's place, in other words, lives in the situation through

the exercise of one's imagination. Since injustice is usually due to lack of imaginative discernment it is well worth while to encourage the children to thus "put themselves in other people's places."

II. DATA COLLECTED BY THE PUPIL FROM VARIOUS SOURCES AND FUSED BY HIM

B. "Juvenile Theses"

In the account of the Seventh Grade "juvenile theses," or "special topics," reference was made to the English teacher's part in guiding the children, and it was stated that more would be said of this work in the chapter on "Self-Expression through English Composition." (See page 100.)

Originality

The most important quality of this piece of written work from the English standpoint, aside from accuracy of statement, is that it should express individuality. It is not enough that the student shall be able to gather and organize data as described. The presentation of the facts should show interest and reflection on the part of the writer, so that the reader will feel that the facts have not been merely juggled around and presented in a new order, but have been exposed to the light of the writer's personality.

We cannot make children original. What we can do is to keep the atmosphere about them free and joyous so that they will dare to be natural. Self-expression is an instinctive tendency. What we teachers do is to check or facilitate its development.

With regard to English composition, if children are treated as though they had nothing within themselves worthy of expression, they will naturally come to the con-

clusion that they really have nothing worth saying or writing. Self-expression is furthered by respecting not only the child's knowledge of facts gleaned from books, but also his thoughts and feelings concerning and reactions to these facts.

When the English teacher first discusses their "special topics" with the class, she emphasizes the desirability of original treatment of the material which they are collecting. On one occasion she asked the class to compare the following introductions to two essays on "Slavery in the United States" written by Seventh Grade children in previous years:

No. 1. The following topic tells of slavery in what is now the United States, from 1619 when it was first introduced in Virginia up to the time when it was abolished. It was practiced mostly in the South because of the need ot hard labor and also because the North did much manufacturing and the slaves were not so well fitted to work in factories as on farms. The warm climate in the South was especially good for the Negroes. The slaves were treated better in the North than in the South.

No. 2. In the following pages I am going to try to give you a brief idea of slavery in America, America the nation where all men are equal. How funny the word "slavery" sounds in connection with it!

Slavery had its origin way back in prehistoric times. Of course, there is no written record of this, but men who have studied the subject are pretty sure it is true.

In the very earliest times cave men would carry home their prisoners, kill them, and then drink their warm blood. This terrible system soon gave way to a slight improvement, the victims were made to do all the disagreeable work. Probably many of them were very cruelly treated, but this at least showed a slight improvement toward civilization.

Before the beginning of history the servant class was considered as a fact and sad to say in most countries there was slavery. Color made no difference. Egypt's noble men were black and her slaves also.

In Greece and Rome there were slaves. These were usually part of the spoils of war, and were almost always white. In fact, in most of the civilized countries of the world this terrible system persisted until the fall of Rome. After a while, however, when the Moors swept over into Europe, slavery was started again.

Slavery was not so bad then as it was later in America, as the slaves often rose to high positions.

In America, however, the slaves for generations were doomed to everlasting servitude. Although after the Civil War, that terrible war where brothers often fought against brothers, slavery was abolished here, it left a terrible blot in the history of our Nation.

The class agreed that the second was more stimulating to their interest than the first.

TEACHER: Why?

CHILD: Because the first is just facts.

TEACHER: Isn't the second facts?

CHILD: Yes, but—the second is longer.

TEACHER: True. The second writer seems to have had more in her mind than the first; she is richer in detail, but does that account for it entirely?

(No answer at first. Then a number of irrelevant suggestions were made.)

TEACHER: Listen to this introduction to an essay on Inventions. Is it like the first or second that I read to you?

No. 3. I am trying to give an idea of the inventions that led to the Industrial Revolution. The Industrial Revolution always brings to my mind a picture of a huge hand stretching out from a factory and pulling into the factory spinning-wheels, hand-looms, men, women, and children to work in the factory with the new power-loom, spinning "Jenny," and fly-shuttle.

When this conflict of old and new methods was settled, quicker means of transportation were needed, so I am also going to write about trains and boats besides the invention of factory machinery.

CHILD: Well, it only tells what the person is going to write about like the first one.

TEACHER: Only? Is there nothing besides? Notice the second

sentence—"The Industrial Revolution always brings to my mind a picture of a huge hand stretching out from a factory and pulling into the factory spinning-wheels, hand-looms, men, women, and children to work in the factory with the new power-loom, spinning 'Jenny,' and fly-shuttle."

CHILD: It tells you what the writer is thinking.

TEACHER: That's it. There's a personal touch. The girl who wrote this *thought* about what she was writing. Did the one who wrote the introduction to No. 1.?

CHILD: Well, you can't tell by what he says. It sounds as if the facts were just copied out of history books.

TEACHER: Exactly. You can't tell. Of course the writer may have thought about his material, but he doesn't *show* that he has. Now notice the first paragraph of No. 2: "In the following pages I am going to try to give you a brief idea of slavery in America, America the nation where all men are equal. How funny the word "slavery" sounds in connection with it! . . . Do you see how in those sentences the writer shows that she has thought about the strangeness of there being slavery in a country where all people are supposed to be equal? . . . Take this. What attitude toward pioneering would you expect to find in an essay on that subject, judging by this dedication?

"This book is dedicated to
Those brave pioneers
Long may they be remembered—
Those brave pioneers
Who toiled through hardships for us—
Those brave pioneers
Who helped our land to grow—
Those brave pioneers
Who moved onward, yes onward
To the cry of Westward Ho!"

CHILD: That of respect for the pioneers.

TEACHER: Yes. And all through the composition this writer shows that she admires them, though she tells all about them,

bad things as well as good. If in the essay you write you *show* that you have thought and felt about your subject as well as understood it, your composition will be much more interesting to read than if you merely recombine and rearrange the facts you collect from your reference books. Make the reader sure there's a real live *you* behind your facts.

The children should not be left with the feeling that they must never *quote* striking passages from the books they read. This matter is taken up very definitely, in the class and with individuals. The way in which one girl was helped to choose suitable quotations will illustrate the method employed. Her topic was Transportation. She came to the teacher and said: "I don't know whether to quote this description of the early stagecoach or to write it in my own words,"

The stagecoach of the year 1818 had an egg-shaped body and was suspended on thick leather straps, called thorough braces, which gave the vehicle a comparatively easy motion. After being worn these frequently broke, and one side of the coach would settle. The patient travellers then alighted, took a rail from an adjoining fence, righted up the body of the coach, and went on slowly to the next village for repairs.

The teacher asked her if, when she first read it, this description struck her as being unusually good. She replied that it did. Did she think she could make as good a picture or better by giving the description in her own way? She did not. Then why not quote it? We usually quote when we find that someone has expressed what we would like to express better than we can do it ourselves.

"Well, then," said the girl, turning to another page in the book, "I certainly think I ought to quote this also, don't you? It struck me so funny."

In order that the coaches should not overturn in the deep ruts on the roads the driver frequently had to call out, "Now, gentlemen, to the right," upon which all the passengers stretched their bodies half way out of the carriage to balance on that side.

The teacher agreed that it should be quoted and the girl went to her seat satisfied. She had a great many quotations in her essay and in the final criticism the teacher was able to comment on the fact that they were unusually well-chosen.

The mention of quotations brings to mind the very important matter of *plagiarism*. Before the children begin their essays there is a thorough discussion of this subject from the ethical standpoint. Conscious plagiarism does not become a problem, but there are always some phases of the subject to be dealt with. The introduction to an essay on immigration began without quotation marks: "I am the immigrant. Since the dawn of creation my restless feet have beaten new paths across the earth, my uneasy bark has tossed on all seas. My wanderlust, etc." The teacher knew immediately that the child did not write that. She called the pupil to her and asked if she had composed it. The girl answered quite innocently, "No. It's a quotation—Oh, I forgot the quotation marks!"

It was pointed out to her that careless mistakes are not all of equal importance, and that to be careless in this respect is a serious offense.

Another girl, when she was telling about the Tenement House Committee, wrote: "A friend of mine, who was a member of this committee told me once about its first investigation. Here are his very words:

"'We were prepared for bad conditions in the tenements, but there was not one of us who expected them to be as

bad as they were. Everywhere we went, we saw dark, dirty rooms; I never can forget the sight of those places,'" —and so on for three paragraphs in which she described the conditions very vividly.

The teacher was doubtful about the existence of this friend and the child's ability to quote him so accurately. She questioned the girl about it. Her answer was that she had no friend on the committee, but she thought the material would be more interestingly and forcefully presented if she wrote it that way. Of course she was told that it could not stand as it was and must be rewritten in the third person. The child liked what she had written and was reluctant to change it, even though she saw the point immediately. The teacher suggested that the only way to make it true would be to go to the headquarters of the Tenement House Committee and get someone there to vouch for the statements. This the girl did. One of the workers was willing to be quoted as having said what the girl had written. So that problem was solved.

As the teacher was reading one of the essays several pages impressed her as sounding very mature and "bookish." She said to the writer, "These pages sound to me very much as if they came out of a history book. Tell me about them."

The child replied, "I did not copy them. I changed some part of each sentence. I used *Thwaites and Kendall.* See here are the pages. I couldn't seem to write this part without looking at the book all the time, but I changed every sentence."

Sure enough. Sentence by sentence the words had been juggled. It was pointed out to the boy that he did not really understand what he was writing about. His pages were destroyed. He read about this phase of his topic in

several books until he had assimilated the ideas, and then rewrote freely in simple childish language.

He had been perfectly honest in intention, not realizing that such a paraphrase is a form of plagiarism. It is however the most common form, and the most insidious, and of course subversive of the very quality for which we are striving in this piece of work, originality of treatment.

Out of the twenty children in one class, seven expressed their individuality through their facts to a remarkable degree. A girl with strong sympathy for the poor and unfortunate wrote a splendid essay on "Slavery in the United States," accurate in its facts, convincing in its sincerity, throbbing with sympathy. A boy with a great love of argument chose "Prohibition" as his subject. It was not easy to make him present the facts on both sides fairly because he wanted to keep on forever giving facts in favor of it. He quoted from Shakespeare and even burst into original poetry now and then. He was helped to see the inadequacy of presenting only one side of a question, and consented to cite opinions contrary to his own, but throughout, his essay bore the stamp of his personality and his strong conviction.

A girl with an artistic outlook on life wrote a delightful essay on the "American Indians." It showed sympathetic understanding of the emotional life which motivates their ceremonials and, indeed, the daily routine of an Indian community. Another girl with a strong practical bent, who has lived a great part of her life on a farm, wrote about life in colonial days in so convincing a way that one would think that she had experienced it. She created a family, father, mother, boy, and girl, and through them presented many phases of colonial life.

Always some children want to write a *story*, and sometimes the best way for a child to infuse his personality into a mass of collected data is to write up the material in story form. In no other way can he so surely prove his sympathetic identification of himself with the characters who are experiencing the conditions of which he is writing. This seemed to be the case in the instance just cited above. Four other members of this group of twenty used the story form in parts of their essays very successfully.

However, some of these children spent far too much time searching through many books for accurate accounts of unimportant details needed to give local color to incidents in their stories.

A graver danger must be guarded against, one illustrated by the case of a girl who wrote about Welfare Work in New York City. Most of her chapters were in story form. She was not interested in collecting sufficient data to make her work valuable from the research standpoint. A few hastily scanned facts set her imagination to work and off she went, creating fictitious experiences, which gave her great satisfaction but which would not have been recognized by the Social Workers of the City. It was easy to see that she was identifying herself with the nurse she had created and living in an imaginary world with a flattering sense of self-gratification in the virtues thus assumed.

Teachers need to be especially on their guard against this tendency of many children to *shrink back into a world of infantile fantasy*, demanding that everything be in the form of a story, even scientific facts dramatized. The child normally developing out of infancy must cease to regard all situations as scenes in which he can play his rôle by identification with the actors. Many children are arrested in this story world and never attain greater development.

They never leave infancy behind sufficiently to recognize that many situations are purely objective. *Things* and *persons* need to be sharply distinguished and many personalities regarded as quite distinct from one's own:

> The baby new to earth and sky,
> What time his tender palm is prest
> Against the circle of the breast,
> Has never thought that this is I:
>
> But as he grows he gathers much,
> And learns the use of 'I' and 'me,'
> And finds 'I am not what I see,
> And other than the things I touch.'
>
> So rounds he to a separate mind
> From whence clear memory may begin,
> As thro' the frame that binds him in
> His isolation grows defined.
>
> TENNYSON, *In Memoriam.*

Otherwise, he becomes a person who reads little except novels and finds little of interest in undramatic expositions of political, scientific, or sociological facts.

The teacher often feels herself in a "strait betwixt two," as the Apostle Paul said. She must help children to develop sympathetic understanding of human situations through the imaginative identification of themselves with other people differently circumstanced; she must not foster infantile fantasy by allowing them to regard subjectively what should be objective.

The writers of children's books, in recent years, have done much to aggravate this difficulty. The stores are full of fascinating volumes, interestingly written, charmingly illustrated. Children devour them, especially city children who have no outlet for creative activity. They live in the fictitious worlds between the artistic covers of these vol-

umes. Often it seems impossible to find a simple, accurate non-fiction book, from which a child can gather the information he needs in studying a given topic. Some of these Seventh Grade children realized this fact. One child said, "Why doesn't somebody write something about the Pueblo Indians that I can understand, and that isn't just stories?"

It seems that in such a research problem the story form should not be encouraged. If a child feels that in no other way can he handle his material, he must be helped to keep his facts accurate, and to draw some useful deductions from them. It may be that some of the children add interest to their essays by including one or two units in story form. A boy writing on "Transportation" included one such unit, an imaginary stagecoach journey from New York to Boston in colonial days. An essay on Child Labor contained this original poem representing the longings of a little Italian boot-black:

WHY?

Why can't I, like other children
Go to school and run and play?
Why must I throughout the winter
Shining shoes, on corner stay?

Why can't I once have a Sunday
Getting dressed in all my best,
Just enjoy a day of leisure
Doing nothing, taking rest?

Why can't I go once to movies
Where the lights are shining bright?
Why I never get a supper
When I come back home at night?

Why can't I like other children,
Go to school and run and play?
Why must I throughout the winter
Shining shoes, on corner stay?

The major part of the essay in each of these cases was conceived objectively. The flights of fancy enlivened and enriched the whole.

Clearness of Expression

As the work on the "special topics" progresses the English teacher is responsible for helping the children to overcome difficulties in the technique of writing so that they can *express clearly* the thoughts that come to them. Of course there are always some children for whom language is difficult. Even in the Seventh Grade, it is sometimes necessary for a child to demonstrate a situation concretely before he can expound it in words. The following example illustrates this point:

A child tried to tell how the Eskimo lamp is used for melting ice. His description was not understandable. The teacher called him to her and asked what it meant. He tried to explain, but could not. The teacher saw that he did not know himself how the contrivance worked and sent him back to the source to restudy the account until he was able to demonstrate on the desk with books and ruler the way the process was managed. She then made him explain it to her in words and helped him to express it.

The final description is not a polished piece of writing, but it is the best that could be expected of this particular pupil:

> The Eskimo drinks a lot of water and to get this water he has to melt ice and snow for which his lamp comes in very handy. The process is to take a large stone and put the lamp on it, then take two smaller stones and place them at each end of the lamp, then place a thin rough rock on them so the ice will not slip off, put the top rock in a slanting position and put a cup at the lowest end of the rock. By placing the ice on the top rock it will melt into water and run down into the cup.

The important thing here was that the child should have been shown how to solve his problem. Clearness of expression will always be relative to the child's ability.

Unity

Another problem certain to arise in connection with this project is that of *unity*. The word itself is not used because it carries very little meaning to a child, but the idea is dealt with concretely. The first chapter in the essay on "Transportation in America" referred to above lacked unity. The teacher called the girl to her and explained how she had "made sandwiches" of her material, first some stagecoach, then some routes, then the number of coaches in Philadelphia, then some more coach, etc. The girl could not see the objection to doing it this way. She could not get the point. So the teacher wrote out on a card the topic of each one of her paragraphs in the order in which she had written them and asked her to take it home with the composition and study the problem that night.

It was also pointed out to her that paragraph six did not seem to belong in the chapter. What had the coaches of England and Scotland to do with those in America?

The contents of the card here reproduced are:

STAGECOACHES AND OTHER EARLY VEHICLES IN THE UNITED STATES

1. Introduction: Stagecoaches in general
2. Line between Boston and New York
   Line between Savannah and Portsmouth
3. Number of people in Philadelphia who had vehicles, 1761–1794
4. Description of coaches
5. Description of other vehicles
6. Stagecoaches in England and Scotland
7. Rivalry among drivers

8. Discomforts of riding in coaches
9. Rail troubles
10. How coaches were kept from turning over
11. Description of a filled stage
12. National Road
13. Concord Coach best.

The girl saw what was wrong and came back the next morning with a plan for rearrangement as follows:

1. Introduction: Stagecoaches in general
2. Stagecoaches in England and Scotland
3. Number of people in Philadelphia who had vehicles, 1761–1794
4. Line between Boston and New York
   Line between Savannah and Portsmouth
5. Description of a filled stage
6. Rivalry among drivers
7. Discomforts of riding in coaches
8. How coaches were kept from turning over
9. National Road
10. Concord Coach best.

She unified and clarified the chapter further by naming at the end of her first paragraph the different kinds of early vehicles used in the United States, something she had not done before. Also she related the paragraph on the English and Scotch coaches to her account of those in America by the sentence, "When the English colonists came over to America, they brought English ideas with them." The final product left something to be desired from the standpoint of unity, but the girl solved her problem herself as capably as her understanding and ability allowed, and that is all one can expect.

Sometimes it happens that what a teacher points out as a problem, the child cannot recognize as such. This happened in the case of a girl who, in an essay on the "Pueblo Indians," introduced two of their folk stories complete without

giving or having any special reason for so doing except that she liked the stories. She was unable to understand that this was irrelevant and the matter was dropped. Her only introduction to the chapter was "The Pueblo Indian stories are very interesting—many of them as interesting as fairy tales."

It is not possible to touch on all points which may come up for discussion in supervising such a project. It is hoped that enough has been said to give a fair idea of how children are helped so that they can more independently solve their own problems in later research work.

CHAPTER VIII

SELF-EXPRESSION THROUGH ENGLISH COMPOSITION (Continued)

III. IMAGINATIVE WRITING [1]

Necessary as are all the foregoing types of composition, it must never be forgotten that the highest goal of written exercises is literary expression, interpretive of life and character as the writer intuitively understands them. The ideal is that the pupil recombine his vital experiences into a new unit which is really original, that is, that he shall write at the dictation of a well-directed imagination. One of the best means to this end is the exercise starting with a given condition or situation or problem to be continued or solved by the pupil's own fancy.

A. Personification

Like primitive people, little children do not discriminate between the animate and the inanimate. All mythologies with their tree nymphs and water nymphs, their thunder gods and dawn goddesses testify to this.

Feeling within themselves a personality which actuates their movements, they attribute the same sort of purposive agency to their pet animals and to wind and clouds and flowers. Things which aid are assumed to do so from kindly motives, things which hurt or thwart do so with unkindly purpose. The kind sun warms, the naughty rock bruises

[1] The complete outline is given on p. 155.

with malevolent intent. In other words, personification is natural to young children.

On the other hand, lack of experience affords them scanty imagery out of which to construct an imaginary world. What we call childish imagination is largely matter-of-fact, naïve ignorance. Their personifications are meager and unconscious. As their experience of life widens, they acquire a larger conception of personality, and greater richness and variety of imagery. At the same time their increasing knowledge of facts helps them to discriminate between those objects which are endowed with personality and those which are not. If now they personify an animal or a thing, the process becomes a conscious one, calling forth many of the most useful attributes of imagination.

Stated from one viewpoint, there can be no higher goal of education than the intelligent sympathy which is imagination consciously at work to construct from one's own past experiences a comprehensive picture of the way another person must be thinking and feeling under given conditions. Most persons in violating the Golden Rule do so through failure to realize what they would wish done to them under the other person's conditions.

We believe that children who have mastered some of the tools requisite for written expression and have emerged from their first period of naïve, universal personification into one where the process may become a conscious and selective one are ready to enjoy and be greatly benefitted intellectually and morally by writing personifications. One such lesson in a Fifth Grade followed the reading of several stories from *Farmtown Tales* [2] in which farm animals are delightfully personified.

These stories called forth from the children accounts of

[2] Thompson, Mary W., E. P. Dutton & Co., 1923.

interesting incidents in connection with their own pets. After several lessons had been devoted to these animal stories, read and told, the teacher one day said:

"John made it very clear how *he* felt when the horse was running away with him, but I wonder how the *horse* felt and what he was thinking. And I wonder what Sue's *parrot* thought when the cat jumped at her, and what was going on inside Harry's *dog's* head when he was chained up to his kennel and not allowed to be free any more. If your pets could have talked, what do you suppose they would have said?"

She proposed that each child write after the manner of the *Farmtown Tales*, having his pet tell the story.

A lesson given in a Sixth Grade will illustrate more fully how the children are helped to direct their imaginations. In this exercise each child was to select some inanimate object and let it tell a story. Before they began to write, the teacher read to them several compositions, written by Seventh Grade pupils. These personifications were discussed in considerable detail, as follows:

THE STORY THE NICKEL TOLD

I was melted and stamped in Washington one day, and was given to a little girl who liked shiny nickels. I was next taken to a candy store and given to the store-keeper, who in turn paid me to a man. This man got on a trolley and I was paid to a conductor. A woman got on the car and I was given to her for change. The woman took me to a butcher-shop and left me there. Then a boy came and got me and went out and put me in a crap game. In a little while I was spent for cigarettes. A little girl came in and got some ice-cream, and I was given to her for change. She took me home and put me in a nickel bank and I am here yet.

The children did not show much interest. The discussion proceeded in this wise:

TEACHER: Isn't it interesting?

MOST OF CLASS: No.

TEACHER: Why not?

CHILD: Well, it just says that the nickel was handed from one person to another. It's just what happened *to* it.

TEACHER: What details might have been given to make it more interesting?

CHILD: He might have told how the nickel felt when it was being melted and stamped.

TEACHER: Yes. What else?

CHILD: When it was in the conductor's pocket, there might have been some other coins there and they could have had a conversation.

TEACHER: What might they have said?

CHILD: Well, the new shiny nickel might not like to rub up against other nickels that were dirty, and it might ask them to keep away from it. Then the others would say mean things about it.

ANOTHER CHILD: One of the dirty nickels might say, "Well, you needn't think you're so wonderful because you're clean and shiny! I was once just like you and some day you'll be just as dirty as I am."

ANOTHER CHILD: One of the dirty nickels might tell the story of its life and make the new nickel ashamed of itself.

TEACHER: Any other suggestions of what might have happened to this nickel?

CHILD: Maybe it was put into a cash register in the butcher-shop and thought it was some kind of a prison.

TEACHER: Yes. Any of the things you mention would have made the story of the nickel more interesting. . . . Now, isn't there anything good in the composition as it stands?
(No answer.)

TEACHER: What about the ending? "She took me home and put me in a nickel bank and I am here yet." Is that a good place to stop?

CHILD: Yes, because it isn't moving around any more and has time to tell its story.

During the recitation the children's attention was called incidentally to the choppiness of the sentence structure and to the unpleasant repetition of *got*.

The teacher then read the second composition called "The Old Ford Speaks" which appealed to the children very much because of the humorous situation created when the Ford was expected to carry the fat lady of the circus and wouldn't "budge an inch" and because of the ending,—the innocent statement—"As I turn to rust, I wonder why the Fords are treated with so much ridicule in public. I imagine a Ford is a good car if it is used right."

Another composition written by a Sixth Grade pupil, a story about a history book, a geography book, and their separate owners, was read and its good points commented on, then a newspaper article beginning:

MISS SPRING HERE,
GLAD TO SEE US,
CHEERS UP CITY.

Young Lady, Accompanied by Pa Knickerbocker, Takes a Tour About Town.

The children enjoyed this and another one beginning:

FERRYBOATS TALK
FOG LANGUAGE

"Zooms," "Phoots," and "Dings" Mean Much When Mist Settles Over River.

This last suggested that the personification of more than one "thing" makes an interesting piece of work. Emerson's poem "The Mountain and the Squirrel" was read to show how conversation alone can personify. And the following

composition showed how a Seventh Grade girl adapted Emerson's idea to her own purposes. She was an especially gifted child violinist:

THE VIOLIN AND THE PIANO.

An artist in his studio had a violin and a piano. Once the piano said to the violin, "You know, I think that you are a poor instrument. You have only four strings and you can never give such rich harmony as I can."

"Yes, my friend, it is true that I cannot make as rich harmony as you but I can sing, and sing so nicely that often I make the people cry when they are listening to me. I can make people's minds travel far away to the green fields and dark forests, to the high mountains and wide ocean."

The violin began to play a wonderful melody and the piano accompanied her. As they played together they made beautiful music with the piano's rich harmony and the wonderful tune of the violin.

The perfection of this piece of work, its originality of conception, beauty of expression, and balance cannot be adequately expressed in words. The teacher looked at the children who sat before her and they looked back at her with appreciation and admiration written on their faces. With this high standard of attainment before them and with the variety of form, monologue, dialogue, or story from which to choose, the children were given a few moments to decide on subjects for their own compositions. Most of them had no difficulty, but to the few who did the teacher suggested "The Mountain and the Valley," "The River and the Ocean," or any other such subjects from geography; the story of something particularly interesting that they owned; of an heirloom in the family, etc. After a little time for thinking had elapsed, the children were called on to tell what they had chosen. A girl with special interest in music chose, "The Organ, the Violin, and the Piano."

A boy who loved baseball chose "The Baseball and Bat." Other subjects were "The Church Steeple," "Sweaters in the Locker-room," "The Wind and the Windmill." A steady knitter chose "A Pair of Knitting Needles in a Desk," a boy who is interested in boats took "The Mauretania and Its Tug-boat." "The Basketball and the Basket," "The Desk and the Chair," "The Nickel, the Penny, and the Dime," and "The Book Shop" were other subjects.[3] By this time the forty minutes were over. The writing of the compositions was done in subsequent periods.

Another exercise in personification followed a Sixth Grade geography excursion to a fish market. The children had been studying about the fishing industry in the United States. While at the market they took notes on the different kinds of fish they saw and where they came from.

At the beginning of an English period, a day or two after this trip, the teacher surprised the children by waving her hand above them and saying: "'Hokus-pokus-jiminy-smokus,' I change you all into fish."

For a moment the children looked astonished, and then fell in with the idea, a number of them making swimming strokes with their arms.

When asked what kinds of fish they were, their answer disclosed that there were almost as many varieties as there were children in the room. In answering the question, "Where were you born?" most of them showed that they remembered what they had learned at the market.

When it was proposed that they write their autobiographies they were eager to begin, but ignorance about themselves made it necessary for the whole class to go to the

[3] It will be seen that most of the subjects are of the dialogue kind, probably because of the last composition read.

library to get some accurate information. Before they went, the teacher explained how to look up a subject in the encyclopedia. The *Book of Knowledge*, *Americana*, and *The New International Encyclopedia* were to be used. Each child was to look up his fish in one of these books and to take notes on what he found.

It was explained to them that a student would work more effectively in such a search for information if he had clearly in mind certain questions which he wished answered. They thought out questions and wrote them down. The questions in aggregate indicated that the children wished to know how the fish looked, where they lived, what they ate and what ate them, where the eggs were laid, how the fish would be caught, under what other circumstances the fish would be likely to die, and any unusual and interesting habits. They were told that they must not expect to find all of these facts about any one fish that they might look up. Moreover they were warned that the articles would contain many scientific terms which they would not be able to understand. They would have to skip the big words and take notes only on the material they might use in their stories.

When the class had assembled in the library the teacher began to read to them the article on the Crab in the *New International Encyclopedia:*

> A crustacean of the order Decapoda and suborder Brachyura, characterized by the small size of the abdomen, which resembles a short tail curved under the thorax. The term extends also to some of the suborder Anomura, etc.

Of course the children were getting nothing from this, so the teacher skipped to the second paragraph. The beginning sentences are impossibly difficult, but presently she came to the words:

The eyes are compound, with hexagonal facets, and are elevated on stalks, which are generally short, but sometimes considerably lengthened, and which have the power of motion, so as to turn the eye in different directions. The first pair of limbs are not used for locomotion, but exhibit in great perfection the characteristic claws or pincers (chelæ) of the decapod crustaceans.

The children could understand most of this and were interested. The rest of this paragraph is easy reading and tells where crabs live, what they eat, and how they run, "sidewise rather than straight ahead."

The third paragraph begins, "Their development is accomplished by metamorphosis"—and like the first is full of big words. It was skipped.

The fourth paragraph contains material suitable for use in a child's story:

Crabs, like all arthropods, moult or change their shell, not at fixed intervals or seasons, but according to the exigencies of their growth, the change being made with great frequency when they are very young, but rarely in advanced age.

In spite of the few big words the children could understand this.

The fourth paragraph also was used. It gives many interesting facts about size, color, and food.

The paragraph on "Economic Importance" was skipped because it looked too difficult, but the following one was read because it tells of the ways of catching crabs.

The children were advised to go through their articles in this way, skipping what they could not understand. The teacher circulated among them giving assistance to those who were discouraged by finding so many big words that they could not "make head or tail" of the article. A few children had to give up the fish they had chosen because they could not find enough material about it.

Each child began to write his composition when he felt that he had gathered enough material, and had worked out a plan for developing it effectively.

The criticism of these stories when they were finished made the children conscious of methods of getting results of which they were unconscious when they wrote. The first composition the teacher read to the class was:

MY ADVENTURES IN THE DEEP

I am a female lobster. I am very funny looking to you humans but I am a very beautiful lobster, if I do say it myself. I have long feelers and two nice big claws with which I catch my food. I can also pinch with them. I will tell you the history of my youth so that you, who are young and foolish, may profit by it.

I do not remember anything until a few days after I was born. I was tucked under my mother's body, admiring her big claws and hard shell.

"Mother," said I, "when will I be as big as you?"

"Pretty soon," she answered.

"But how soon?" I persisted.

"When you are as old as I am," was the answer.

"How old are you?" I asked.

"Little children shouldn't ask so many questions," answered my mother snappishly. I said nothing more.

A few days later I was congratulating myself on the fact that my shell was getting nice and hard when suddenly I had a curious feeling. I felt as if my skin was coming off! I called my mother and she hurried up.

"Mother, what is happening to me?" I asked.

My mother, who had just come up gave a glance at me and then sighed relievedly.

"Oh, I thought you were in danger," she said, "you are just moulting."

"Well, if this is moulting I'm sure I don't like it," I said, "but what is happening to me?"

"Why, your skin is coming off and you have a nice new one underneath," was the reply.

"Is my shell coming off too?" I asked anxiously.

"Of course," answered my mother.

I was so disappointed I began to cry.

"Why, what is the matter?" asked my mother.

"Oh, oh," I wailed, "just as my shell was getting nice and hard I have to moult. What shall I do!"

"Never mind," said my mother soothingly, "your new shell will grow twice as fast as the old one and will be twice as hard, by the time you moult again. You will moult many times during the year so you must get used to it now."

"And will my shell always come off?" I queried.

"Oh, no," was the answer, "when you are grown up your shell will be so hard that just the skin on top of it will come off. But come and get out of your skin."

Not long after this my mother decided it was time for me to go to school. I did not like the idea very much as I preferred to stay with my mother and play, but I went with her to the old schoolmaster. He was a large old lobster with big claws. While my mother was talking to him I looked at the class. It was a very small class. I knew everyone in it. There was Rosie, Johnny, Harry, Jimmy, Charlie, Teddy, Benny, and Joe. You most likely are surprised that there was only one girl in the class. But a lot of the old lobsters thought that the girls did not have to be educated. My mother thought differently, however, At last she got through talking and prepared to leave. I was rather frightened at being left there but my mother assured me that it would be all right. So she went.

As soon as my mother had gone the old schoolmaster turned to me.

"What's your name?" he said gruffly.

"L-Lucy Lobster," I stammered.

"I suppose you don't know the alphabet?" was his next question.

"N-No sir," I said.

"Well come here. Do you see this? This is *a*, and this is *b* and this is *c*. Now go to that seat and study them," said he.

I went and all morning all I did was say *a*, *b*, *c*, *a*, *b*, *c*, over and over. At last the schoolmaster said that we could go.

So that you can fully understand all my school adventures I must tell you something of our school hours. We lobsters do not like the light so we usually sleep during the day. In the early morning we went to school from five to eight. We then went home and slept until five o'clock in the afternoon. We then went to school until

nine o'clock. An hour was allowed for lunch and we then went to school until two o'clock in the morning and then we were allowed to go home until five in the morning again. I had started to school in the early morning.

As soon as I got home my mother said, "Well, how do you like school?"

"Oh, it is so dull," I answered, "all I did all morning was to say *a, b, c, a, b, c,* over and over again and I am so sleepy that I cannot keep my eyes open." And before you could say "Jack Robinson" I was asleep.

I soon grew to like school, however, especially the stories of daring explorers who had gone out to explore the unknown. But alas! not one of them had ever come back. I was filled with a burning desire to follow in their footsteps, even if it did cost me my life. At last I thought that I would get undying fame for myself if I started out before I was grown up. So one day instead of going home to sleep when school was out in the morning I started out towards a part of the sea that was unknown to us. I had just gone a little ways when the light began to get stronger. It was uncomfortable but I pushed on determined to "do or die." At last I could stand it no longer and I was becoming so sleepy I could move no farther. I decided to make one last desperate try. I turned in a different direction thinking that perhaps here the sun would not be so strong. But it was even stronger there than where I had come from. I sank down and had just strength enough left to utter the one word, "Mother." After that I knew no more for a time.

The next thing I knew was a feeling of complete comfort.

"Oh, I must be in heaven," I thought.

Then suddenly I heard my mother's voice.

"Thank goodness, she's alive," I heard it say.

I opened my eyes, but had just time to catch a glimpse of my own familiar home, before I had to close them again, as they hurt so much.

"Mother," I called.

I heard footsteps.

"Yes, what is it?"

"Oh, how did I ever get here?" I said, "I thought I would never see this again."

"Well, when I found that you did not come home to sleep I set out to hunt for you. I found you right outside our lobster village."

"Oh, but I'm sure that I went much farther than that," I said.

Just then an idea struck me. I could not see when the light got strong so that when I turned I must have been going right back to the village. Just as I had figured this out my mother broke in upon my meditations.

"Where in the world were you going child, and why didn't you tell me first?"

"I was going to be an explorer," I said, "but I had to stop."

"An explorer indeed," said my mother, "as if any good could come of being an explorer. You just get all such silly notions out of your head, and be content to stay at home. Whenever you want to explore something you come to me and I'll give you a school book to explore so that you'll learn something else besides history."

I was so thoroughly frightened by the thought that I was almost killed that I never ventured out of the village again. And so my early adventures were "nipped in the bud," by the almost fatal end to this one.

A report of the discussion follows:

TEACHER: Well, did you like it?

MOST OF CLASS: Yes.

TEACHER: What were some of the good things about it?

CHILD: It tells a lot about lobsters.

TEACHER: What, for instance?

CHILD: Well, it tells how the lobster looks and how she sheds her shell, and goes to school at night, and sleeps during the day.

TEACHER: How many of you enjoyed the part about the moulting? (Most of the class raised their hands.) Can you tell how the writer made it so interesting?

CHILD: It makes you understand just how the little lobster feels. At first it's frightened and then it thinks the moulting is a nuisance.

TEACHER: That's good. The writer tells us how the lobster feels. If we had been told simply that she shed her skin every once in a while, it wouldn't have been so interesting, would it? . . . Now what about the lobster's going to school? Was that good?

CHILD: I think the idea of having the lobster go to school was good but I don't see how it could study out of a book.

TEACHER: I wondered about that, myself. It seemed to me the school was more like one for humans than one for fish.

CHILD: Yes, and a fish couldn't learn our *a*, *b*, *c's*.

TEACHER: I shouldn't imagine so, and if he could, what good would it do him? . . . Now, what would a lobster learn in a lobster school?

CHILD: He ought to learn about other kinds of fish, those that will eat him and those that won't, and places to hide.

TEACHER: Yes. What would he study in history?

CHILD: Probably, about all the famous lobsters that have lived before him and their wonderful deeds.

TEACHER: I should think so. . . . There's another thing in this that makes it seem more like a story concerning humans than lobsters.

CHILD: Their names are human names—Lucy Lobster and Johnny and Harry and Teddy and like that.

TEACHER: Yes. Now listen to this—"The Story of Miss Weeny Mackerel." Notice the names in it.

THE STORY OF MISS WEENY MACKEREL.

"Oh dear, oh dear," said a baby mackerel trying to break through her egg, "this is dreadful. I have been trying and trying to get out of this for one whole minute, oh how I wish I could see the world." Just then she heard a little crack and to her great surprise she was out swimming in the green water.

"Oh, how wonderful to be alive," said she as she sat down to rest. As she was sitting there and eating some moss she saw some more eggs hatching.

"Oh!" she cried in delight, "they are my brothers and sisters." And she swam to meet them.

"How do you do, sister?" they asked as they greeted her.

"Very well, thank you," she answered. "What beautiful fish you are." "Come," she said, "we will swim a bit." So off they swam and they met Parson Salmon.

"What fine mackerel you are," he said. "And what are your names pray tell?"

"Names? Why we haven't any," they said.

"You poor little things! I shall name you." Then Parson Salmon took a coral Bible from his pocket and looking at them said:

"Come, my children, the oldest shall be named first." Then taking our heroine by the fin said:

"You, my dear, shall be called Miss Weeny Mackerel for you are so small and dainty." And he named the others Silver, Fleet Swimmer, Sleepy Eyes and Mossie Tail Mackerel. How happy they were to have such lovely names. After the ceremonies were over they had a wonderful luncheon. The brothers went on a hunt to get smaller fish while the sister waited at home. They brought baby herrings, baby pilchards and baby sprats, while Parson Salmon went home for Mrs. Salmon who loaned the little mackerels her new pearl dishes and her fine woven seaweed tablecloth. Oh! What a wonderful time they had. Mrs. Salmon taught Weeny how to set the table and how to prepare food.

The babies grew into wonderful fish and loved one another very much, but sometimes they didn't obey Weeny.

One day they went in shore to follow herrings, pilchards and sprats for food. Weeny not being as fast as the others was behind. She saw Mrs. Bessy Mackerel very much upset and swimming very fast.

"What is the matter?" Weeny asked.

"Oh what shall I do!" she said in great distress, "my baby has been caught in a wall of little holes and he can't get out. He tries to but it is moving slowly upward and he can't! Oh my poor little boy! My poor little boy!" And she burst into tears.

"I wish I could help you," said Weeny.

"You can't help me," said Mrs. Mackerel, "but you can save your brothers and sisters. Swim quickly and tell them not to swim in shore or they will be caught also."

"I will, I will," said Weeny, but as I said before she was not a fast swimmer. She swam with all her might and could see them in the distance. At last she was near enough for them to hear her.

"Stop!" she called, "or you will be killed!" They all stopped but Sleepy Eyes who was very disobedient.

"Do stop," said Weeny between her tears, "for Weeny knows best." But he swam on.

"I will do no harm," he said. But he could say no more for he had his head in the wall also.

How bitterly the mackerels cried. That evening they could not

eat their supper and when they went to bed Weeny made them promise they would always obey her. Then they all said a little prayer for Sleepy Eyes and went to bed with heavy hearts.

Weeny lived to be older than the rest and she raised two hundred thousand (200,000) little mackerels.

When she died her name was remembered for bringing up such wonderful and useful fish.

The End.

TEACHER: How many of you like the names that Parson Salmon gives the little mackerels better than those in the lobster story?
(Almost all the children raised their hands) . . .
What else did you like in it?

CHILD: The pearl dishes and the seaweed tablecloth.

ANOTHER CHILD: Calling the fish net a "wall of little holes."

TEACHER: Why was that very good?

CHILD: Because that's the way it would probably look to the little fish.

TEACHER: Was there anything poor in this story?

CHILD: Mrs. Salmon shouldn't have said "Oh, my poor little boy!" And there was one name—Mrs. *Bessy* Mackerel.

TEACHER: True. But otherwise, it was a good story, wasn't it? . . . Now, here's one about "Mrs. Elly Eel."

MRS. ELLY EEL.

My name is Mrs. Elongated Eel, but I am called Mrs. Elly Eel for short.

I live in a little spring in the mountains. My home is a little nook with a rock in front of it covered with mud, the mud is the nicest part of the house. The cool water from the melting snow on the mountain top is constantly flowing over the rock. I have an ideal site for a home and it is the envy of all the other eels in that part of the brook.

One day my friend, Mrs. Slippy Eel and I were talking together, just gossiping when I chanced to say:

"To-morrow I shall start down stream to lay my eggs. I hope I don't get caught. Last year Slimy went with me but this year I must go alone, oh dear such is life," sighed Mrs. Elly Eel.

"If you wish I will go with you," gallantly responded Mrs. Slippy

Eel, "I have no wish to stay here. If you will permit me to accompany you I will be very much pleased."

"Indeed I should like to have you go with me, please be on time. I shall leave at the moment that the first bird carols tomorrow morning."

With that they parted.

Next morning they were gliding swiftly down the brook chatting gayly as they went.

Suddenly Mrs. Slippy cried, "Stop! Stop! Don't go any farther. There are some human fish trying to catch us in a piece of cloth with holes in it." I believe humans call them weirs.

Mrs. Elly Eel did stop. If she had gone any farther she would have been entangled in the meshes and then all would have been over. A chill went through her long slimy body.

They waited a long time until the darkness started to creep over them. The human fishes started to pack up their belongings and went away taking everything but the weir, but these fishermen were ignorant, they did not know that eels can travel over land, so as soon as the humans had gone they were flippety flopping over the rocks. The two eels went past the weir and continued their swim down the streamlet.

Finally they reached the salty ocean and Mrs. Elly Eel immediately laid her eggs and guarded them carefully while poor Mrs. Slippy who was more adventurous went swimming around and was caught.

One day as Mrs. Elly Eel was guarding her precious eggs she saw a squid swimming around near her.

The temptation was great, should she leave her eggs and go after the squid? Yes she would and off she swam in hot pursuit.

She caught the squid and was returning victoriously when she saw but three eggs left. While she was gone Mr. Salmon had kidnapped her children.

She was so stunned she forgot to eat the squid and it sank to the bottom of the ocean.

"Oh dear" she sighed, "I wish I was not so headstrong." Mrs. Elly Eel returned up the stream to her home of mud and stone with only three children left. It was to these little baby eels she told this story and concluded it with, "I have learned a lesson and I hope I have taught you one through this story and if you want to live a happy life never leave your eggs in order to catch a smelt."

CHILD: That was very good because it tells all about the way the eel lives and how it goes down to the sea to lay its eggs, and about the weir.

ANOTHER CHILD: I liked it when it said, "a chill went through her long, slim body," and they "went flippety flopping over the rock."

ANOTHER CHILD: But that isn't right, is it? Eels can't go over rocks.

THE WRITER: Yes, they can. The encyclopedia said that if there is anything in the stream to prevent their going on, they crawl around it over land.

TEACHER: Did you like the way in which the writer told the fact that salmon eat eel's eggs? (Most of the children nodded assent.)

So the lesson continued until all the stories had been dealt with and all the good points commented on.

III. IMAGINATIVE WRITING

B. Identification

Yet nearer our goal, the interpretation of life through exercise of the imagination, is the composition in which the child identifies himself with some other person in circumstances different from his own.

Sometimes the children in the Seventh Grade are given a shadowy suggestion of a plot and left to work out an exciting situation and show the emotional reaction of the characters. In one such lesson the problem given was to surprise the reader. The teacher read the following sentences: "John was very much frightened. He dared not turn around in the darkness to see what was following him."

The children were then asked to think out a very brief story which would explain the mysterious follower in some interesting and surprising way.

Several children were allowed to recite before any criticisms were given. After the class had told what they

thought of these recitations, whether or not they considered them interesting, how they might have been improved and the like, the teacher called their attention to the need of maintaining proportion amongst details. Many children in the Fifth and Sixth Grades develop an unconscious feeling for balance in their written work. By the time they reach the Seventh Grade they are old enough to face this technical point definitely and this exercise affords a suitable opportunity.

After this preliminary lesson the class was ready to write a short surprise story suggested by the following paragraph: "One dark, stormy night I sat in my room reading. Suddenly I heard a peculiar noise." The discussion which followed the writing of the "stormy-night" episodes is given in full. The teacher read two of them and called for comparative criticism.

THE PIANO PLAYER.

The wind moaned, and blew through the trees outside, shaking and rattling their branches. Not a star could be seen, the night was pitch dark, and the rain beat heavily against my windowpane. I could hear it steadily drip, drip, drip, from my roof.

As I sat reading, deeply absorbed in my book, I suddenly became aware that somebody was playing the piano. This was very unusual, as no one was in the house but myself. I shivered as I listened to the notes, which were softly being played, sometimes two at a time, then a pause, only to begin again. All at once I heard a thump, and then a long wailing "me-ow" came from the music room, and I knew it was Minnie the cat.

ONE DARK STORMY NIGHT.

One dark stormy night in November I was sitting in my room reading a book. Suddenly I heard a peculiar noise. It sounded as though somebody was calling for help. For a moment my heart stood still. I was all alone in the house as my parents were visiting some friends and the maid was out. Again came that peculiar sound,

faint but distinct. I opened my door and looked down the hall. There was nobody there. Suddenly in bold tones I called out, "Who is there?" There was dead silence. I went back into my room and picked up a big pair of scissors that was lying on the table. By this time the noise had grown louder and louder. I became suddenly very brave and walked down the hall calling out in loud tones, "If there is anybody there answer me." Just as I said that I walked into the living-room, turned on the light and saw caught between the table and the wall my little black cat. I lifted her out, gave her a good scolding for frightening me so and then took her back to my room to save any more trouble.

TEACHER: Which do you like the better?

CLASS: Number two.

TEACHER: Why?

CHILD: Because there's more of a surprise in it. In number two the noise is made interesting. You can't help wondering what it was, whereas in one the writer tells right away that it was the piano.

TEACHER: Yes. There's more suspense in two. Listen to this composition.

THE MYSTERIOUS SQUEAL.

One dark stormy night in November I was sitting in my room reading. I was alone in the apartment, but was wholly unconscious of the fact, as I was absorbed in one of Mrs. Seaman's fascinating mystery stories. Suddenly I heard a loud shriek, followed by a long squeal, which stopped very abruptly. I was too frightened to move at first, but when I finally collected my thoughts I was as helpless as before, because what could I do? Ah! I knew! I would take a knife and go from one room to another, searching for the cause of the shriek; but on second thought I decided that the plan was foolish. What was the use of the knife? If somebody let out a shriek like that, they certainly weren't going to attack me! I would be brave! I would go weaponless—; but suddenly the wail came again interrupting the train of brave thoughts. This time it took all of the brave thoughts out of me. I just sat still for a few moments, and then my curiosity overcame my fears. I ran into the hall, but there was nothing there. From there I ran into the kitchen, and here, right

before my eyes was the solution of the mystery! There was a mouse caught in a trap by its tail!

The teacher paused at the word *mystery*. Then said to the children, "Each of you guess what made the noise." When she read the last sentence, "There was a mouse caught in a trap by its tail!" incredulous smiles spread over the children's faces.

TEACHER: Well?

CHILD: The ending spoils it. You think the noise is going to come from something big or unusual, and then it turns out to be nothing but a little mouse.

TEACHER: How does the writer manage to produce this dissatisfaction?

CHILD: He makes too much of the noise. And besides, the noise is impossible. . . . A mouse can't shriek and wail. It can only squeak.

TEACHER: In other words, the composition is top-heavy with details. The balance and proportion are not good. Now listen to this composition and see how it compares.

THE MYSTERIOUS SOUND.

It was a dark and stormy night when the lightning flashed and the thunder rolled. I sat in my room reading the book *Tales of Mystery and Imagination* by Poe. I was very much interested, excited and afraid, for I was reading about the villain who had gotten into the house, and with a big knife in his hand was going up to kill the master of the house.

All of a sudden I heard a little squeaky noise as if somebody was trying to force open the door. I listened intently. Perhaps it was my imagination. I read on.

Tramp! Tramp! Tramp!
What was that noise?
Tramp! Tramp! Tramp!

I was expecting to see the villain with a flashing knife in his hand.

Tramp! Tramp! Tramp!

I took out my pocketknife and flourished it in the air, saying to myself I would do the same as those brave heroes whom I had heard

so much about, who had fought a whole troop single-handed. Finally, gathering all my strength and courage I said in what I thought was a very loud voice, but which really sounded like a mumble:

"Who is there!"
For an answer I heard
Tramp! Tramp! Tramp!

I wondered why it took the villain or whoever it was so long to walk from the place where he was to my room. So gathering my courage again, I proceeded to walk towards the dining-room where I thought the noise came from. I walked cautiously, ready to turn and run back. Finally, I got to the dining-room and putting the light on, I looked around. At last, to my great relief, I saw that one of the dining-room doors hit against the other door and it was this which caused that noise. The wind did the pushing.

CHILD: It's much better than the others because it has an original idea for the noise. It isn't a dog or a cat or a mouse.

ANOTHER CHILD: It keeps you in suspense wondering what the noise is.

TEACHER: Are you satisfied when you find out?

CLASS: Yes.

TEACHER: What is the secret? How is it done?

CHILD: Well, somehow the details are told in such a way that it all sounds possible.

The matter of proportion is not, of course, the only one brought out in connection with such an assignment. The last statement led to a discussion of definiteness and its value:

TEACHER: "Sounds possible," you say. How many of you agree that this last one sounds more possible and convincing than any of the others?

(Most of the children raised their hands.)

TEACHER: Is there any other reason for it besides the matter of good proportion?

CHILD: The way he describes the noise—"Tramp. Tramp. Tramp."

TEACHER: Why is that better than saying merely "I heard a peculiar noise" or "I heard a little squeaky noise as if somebody was trying to force open the door"?

CHILD: Because you can almost hear the sound when he says, "Tramp. Tramp. Tramp."

TEACHER: Yes. The latter is more definite. The more definite you can make your ideas the better. But in the first composition I read to you the person said, "I suddenly became aware that somebody was playing the piano." That's more definite than "a peculiar noise," and so is number two when it says, "It sounded as though somebody was calling for help."

CHILD: Yes, but it's *too* definite; it gives the whole thing away and there's nothing to wonder about.

TEACHER: Yes. Then the idea is to be definite without being too definite. That isn't easy, is it? Notice that writer number two says first, "I heard a peculiar noise," and then makes it more definite by saying, "It sounded as though somebody was calling for help." The next time she hears the noise, she calls it a "peculiar sound" and adds two ideas, "faint" but "distinct." The third time she says, "the noise had grown louder and louder."

Compare her way of describing the noise with that of the third writer. He didn't say "peculiar noise" at all. He made it more definite by saying, "All of a sudden I heard a little squeaky noise as if somebody was trying to force open the door." And then he made it still more definite by using a word which sounds like the noise itself—"Tramp. Tramp. Tramp." Which is the best of all?

CLASS: "Tramp. Tramp. Tramp."

CHILD: But didn't we *have* to say "I heard a peculiar noise?" You wrote it on the board as one of the sentences for homework.

TEACHER: Oh, no. If you can better the statement as this last writer did, there is no objection—so long as you keep the idea.

CHILD: Must the sentences come at the beginning?

TEACHER: Did they in the compositions I read to you?

ANOTHER CHILD: No. In number two they did, but in number three and four they were separated.

TEACHER: Put them wherever they seem to you to express best what you want to say.

There's another interesting point in these compositions that is worth noticing. The first writer says merely "I sat reading." The second says "I was sitting in my room reading a book." The third says "I was absorbed in one of Mrs. Seaman's fascinating mystery stories. And the last one says "I sat in my room reading the book *Tales of Mystery and Imagination* by Poe." Which is the best?

CLASS: The last.

TEACHER: Why?

CHILD: Because it's more definite.

TEACHER: Yes. Again you see that definite ideas are the best. This has a bearing on something else, too. Did you note how very courageous all these people were? How they took up knives or scissors and marched bravely in search of the noise? (Class smiled and nodded.) Which one's courage seemed most convincing?

CLASS: The last.

TEACHER: Why? (In the pause which followed the teacher read the last one again.)

CHILD: Because he tells you that he's been reading one of Poe's books, and that his imagination was all excited. He was just reading about a villain who was going to kill someone with a knife, so when he took out his pocketknife, it doesn't seem so foolish.

TEACHER: Good. By telling us definitely what state of mind he was in and why, he makes us believe more easily what he did. So much for definiteness! . . . Now as to the endings of your stories. Listen to these three endings.

I was on the verge of collapsing when I opened the door and in bounded my collie puppie, Spot. I laughed and cried at the same time with Spot licking my face all the time. On thinking it over I thought how childish and scared I was. Spot had been frightened by the storm and as he saw the light, he knew I was awake and sought for company.

. . . and saw caught between the table and the wall my little black cat. I lifted her out, gave her a good scolding for frightening me so and then took her back to my room to save any more trouble.

There was a mouse caught in a trap by its tail!

CHILD: The third is the best, because after you've told what the noise is, you don't want to add a lot of unnecessary explanation.

TEACHER: Do you object to the one sentence added in number two?

CHILD: No. But the first one adds too much.

TEACHER: It seems as if the explanation of the noise, or the climax, makes the best ending.

The matter of originality is bound to come up.

CHILD: I tried to think of some original noise to put into my composition and it's very hard.

TEACHER: Yes, not everyone can be original, and don't try *too* hard. Remember composition number two which you thought very well written even though the noise came from a cat. Listen to this one:

MYSTERIOUS SOUNDS.

It was a very dark night. No stars were to be seen and the moon hid itself as though it would fear to come out alone on a night so dark, so still. I awoke hearing some strange sounds of our piano. My heart began to beat very quickly. I sat up and listened, I could hear nothing. Thinking that I had only dreamed it I decided to go to sleep. Again I heard the strange passages of the piano, I heard clearly, I did not dream. Immediately came to me the thought that our piano was near the window, if a thief should climb up the window the first thing he would step on would be the piano. I left the piano open, the window was open also. I quickly picked up my teddy-bear, making him growl his loudest, and with a cry "Thieves! Thieves!" I woke up everyone in the house. I explained what I had heard but as nobody else heard anything and I kept on saying that there were thieves in our house, my parents thought that I was sick. In a minute my mother was measuring my temperature, daddy calling up our doctor, when again the sounds were heard. This time we all heard

it, ran into the room, and . . . I saw my own, dear, little pussy mildly walking and running about the keys of the piano.

TEACHER: The noise in this is again made by the cat, but what is there original in it?

CHILD: The idea of thieves and that her parents treat her as if she were sick.

TEACHER: You see, you can take a commonplace noise and write it up in an original way. The result is just as interesting.

In an oral exercise one Seventh Grade was asked to describe some scene or incident of a visit to New York City, each of them impersonating an individual ignorant of the city and its ways. The problem was to make the description interesting to an audience entirely familiar with the scene itself by reflecting the surprise of the inexperienced observer.

One girl in very cleverly sustained, provincial dialect, told a story about calling in several offices of a big building to inquire after a cousin who was employed somewhere in the great city.

The argument ensuing was whether it was correct for the distinguished gentlemen in the offices to be represented as replying in the crude dialect of the unlettered narrator. Several declared this to be faulty. The story-teller, however, stoutly maintained that the narrator spoke his dialect because he knew no other language, and naturally could not change when quoting other people. Such discussions are often provocative of much serious thought.

History affords an endless number of opportunities for lessons in identification. Henry Hudson is always an appealing figure. After a certain Sixth Grade group had studied about him, they were shown the sad picture of him and his little son set adrift to die on Hudson Bay. They tried to express in writing what his thoughts must have been. The

effort helped to make them feel poignantly how cruelly the world has treated some of those to whom it owes much.

Usually after a group has studied the colonial period, they write compositions in the form of letters (and this is the only type of letter ever given to the children as an academic exercise) in which each imagines himself or herself an English boy or girl living in the year 1650. Circumstances have made it necessary to leave the English home and go to live with a relative in Massachusetts. After the child has been there for a while, he writes a letter to a very dear friend in the English town where he lived, telling about his new home. From a general outline suggested by the class and written on the board by the teacher, each child makes his own outline. A typical outline would read,

The voyage over.
Description of relative's home.
How people earn a living.
What child does to occupy time.
Pleasures the people have: "bees."
Indians.

No child is allowed to begin his composition until his outline has received the approval of the teacher. The next step is to see that all statements are accurate. The maps in history and geography books are used to locate a definite place for the English home and a definite place for the colonial home. The journey must be carefully traced and the length of time it would take known. Alice Morse Earle's *Home Life in Colonial Days* [4] is a most satisfactory source of information for the children's use. A discussion of the language to be used brings out the idea that no slang or modern idioms must be introduced. How the people of those times talked is shown in a real colonial letter read by

[4] The Macmillan Co., 1898.

the teacher. This composition affords freedom for the imagination, circumscribed only by the necessities of historic accuracy.

Always the American Indian becomes very familiar to the children through their study of history. Their point of view is, of course, that of the white man, regarding the Indian's appearance and character, since that is the point of view of the historian. How the white man must have impressed the Indian is another matter. Often a class is interested in the attempt to express his ideas and feelings.

One class was taken to the Museum of the New York Historical Society to study the early history of the city. Before they left the museum the children were told that they would be expected to write a composition about something they had seen that day. They were free to pick out any object which they had especially enjoyed, and to write a description, a story, a poem—whatever they liked. They were told that they might scatter and each study more carefully his chosen object.

Two children stood long before a life-sized marble statue of an Indian, entitled "The Last of His Tribe." The face is full of sadness, he is evidently thinking deeply. So were those two children, as is evident from the papers they handed in. One crudely, one in language of unusual beauty for a child, identified himself with a sadly ill-used people:

AN INDIAN'S THOUGHTS.

Shall I submit to the white
man's way
And work gath'ring corn
and hay,
Or shall I fight for my
wild life,
Great Spirit, shall I use
my knife?

O, Great Chief, what do you
advise
As I cannot call a man
more wise,
Shall I go out and fight to-
night,
Or do what they declare
the right?

THE LAST OF HIS TRIBE.

He sits alone in the hall of a great museum. His bow and arrows lie neglected at his feet and his head is on his arms, for he is thinking deeply. Many people look at him as they pass and wonder of what he is thinking. Are his thoughts about the hunt? Is he thinking about war with another tribe? Is he thinking about a canoe trip up one of the rivers that flow past his home?

No, his thoughts are about the great change that has come about since he roamed the forests free, how he used to shoot the moose and deer on this very spot, how he used to fish in the streams that were once his. He remembers also how Henry Hudson and his ship, the "Half Moon," sailed up the river that now bears his name and how the Dutch bought the island of Manhattan from his people for a few beads and trinkets. "How foolish we were," he thinks, "to give up our hunting grounds to the white men, who gave us so little in return." He remembers how he and his tribe greeted Henry Hudson and gave him and his companions food and shelter and how in return his people were driven from one place to another by the white men until only a few of them are left in this great country.

He remembers the prosperous settlement that grew up in the land that was once his home. The white men of other lands came and settled on the island and after many years it became a great city by the name New York.

He still sits in a great museum, his bow and arrows neglected at his feet, thinking how times have changed since the coming of the palefaces. And he is the last of his tribe!

CHAPTER IX

MASTERY OF CERTAIN COMMON TOOLS

Throughout the foregoing pages, we have constantly taken for granted that pupils have mastered the fundamental tools for acquiring knowledge. Every upper grade and high school teacher knows that this is an unwarranted assumption. Throughout the elementary grades there must be continuous emphasis upon arithmetical processes, penmanship, spelling, and most of all upon reading technique. If little space is given to these *pure practice* subjects it is not because we belittle their importance, but because so much has been done for us by experts that there is no need of our exposition. Progress has been made toward the scientific construction of textbooks in the tool subjects, progress based upon demonstrated facts, for extensive experimentation is the only method for this field. It is essential for every progressive teacher to keep herself abreast of the results of such experimentation in order that she may use the drill methods which are proved to be most effective. Many otherwise strong teachers err because they allow themselves to regard this practice work in formal processes as irksome. Incidentally children do not so regard it. The spiritual or æsthetic appeal of literature, our delight in helping childish minds to open to the great human problems presented to them in books, must not divert us from recognition of the hours which may be procured for such student pursuits by effective methods of reading. We must recognize that training and drilling are

as important in the attainment of even an idealistic literary purpose as are development and discussion.

At first thought, indeed, it may seem that study means the learning, weighing, and application of *ideas*, and therefore, that teaching how to study connotes a guiding of the pupil in these processes only. But since swift, accurate handling of the tools of knowledge is a fundamental prerequisite to the acquisition of knowledge and since we recognize that drill forced upon a child is not effective drill, that practice often makes imperfect, that there are better and poorer methods of self-drill, we see that to enlist a child's intelligent interest in drilling himself by the best methods is in reality one means of teaching him how to study. He must, to be sure, master certain techniques, but most important of all is it for him to become familiar with and master the wonderful mechanism of his own mind by means of which he can acquire all needed techniques.

ARITHMETICAL PROCESSES

The literature of drill methods is always overweighted with arithmetic. While we have felt real enthusiasm in developing a procedure of our own, we feel less need for promulgating it than we do in the case of procedures in less exploited subjects. It can be briefly stated.

All possible details of the processes in elementary arithmetic have been listed and an elaborate system of diagnostic and review tests and practice exercises has been formulated and mimeographed. As soon as it is discovered that a given child is ignorant of a certain process or inaccurate in its performance, he is assigned exercises in that process in his "*prescription folder*." He works at these exercises, consulting answers when so inclined and with no supervision. When he has completed enough examples of this

kind to consider it a safe risk, he asks for a test upon the process. If he makes a practically perfect score he is released for the next process. If his test paper shows errors, he must take more exercises and be given a duplicate test. In this way, every child is working on what he himself needs. During these quiet working periods the teacher can devote a few minutes of individual instruction to the children who cannot otherwise profitably attack their practice exercises.

During other periods the class works together on problems of value for their own content, problems dealing with geography or history materials, or with topics studied in hygiene or with those uppermost in current events.[1] The answer itself, that is, the content, is the goal of prime importance and is the subject of class discussion. However, any child failing in the solution of a problem through inaccurate calculation, will find the particular process at issue in his "prescription folder."

FORMAL ENGLISH

The technicalities of written composition, the use of capitals, punctuation, etc., are considered as tools needed by an author in making his ideas clear to his readers. Thoughts are committed to writing in order that they may be read. Therefore, the effect upon the reader is paramount.

We try to keep uppermost in our minds and in the minds of the children a consciousness that certain elemental faults are to be avoided, not because they are faults, but because they do not give satisfaction in expressing ideas. This emphasis on what gives satisfaction and what does not is more productive of results than drill in definitions

[1] See pp. 131–136.

such as, "A sentence is a group of words expressing a complete thought," and "A paragraph is a group of sentences dealing with one topic."

It is not expected that the children will leave the elementary department sufficiently conscious of the principles, methods, and tools to be used in literary composition to apply them all independently and at all times. Even the use of complete sentences cannot be predicted. "I do not believe that any English teacher can send a class into the Eighth Grade, all the members of which will always use complete sentences. It is a *sense* and must be developed throughout all the grades."

This feeling for correct usage in the matter of technical details grows slowly and its growth cannot be hastened by tiresome insistence and the learning of many rules. An English teacher who undertook some work in high school after having taught exclusively in elementary grades for several years, says:

> I realize now how much time I have wasted in the past in correcting compositions, marking every mistake, and how much of the children's time I have wasted in having them correct all the mistakes. Now we concentrate on only one at a time. The children are expected to criticize their own work in regard to this one point before handing in their papers; it is made a conscious aim, to study this one point. So point by point is definitely attacked, for the most part in short formal lessons, the results being criticized in class. Then in their compositions, the children are held responsible for only those technical matters which have been so taken up in class. And these are not many. It seems reasonable to expect that the habit of self-criticism will develop in time.

We follow this practice of separating almost entirely the composition writing from drill in technical matters not only to help to keep clear in the children's minds that form is subordinate to thought, but because experience has taught

us that when children are about to write compositions and are filled with the ideas they wish to express, it is almost impossible to interest them in technical matters. If forced to attend to them at such a time the children lose interest in the creative work and do not gain interest in the technique.

Technicalities can be made interesting when frankly regarded as tools to be understood and mastered. It is not enough for the teacher to be conscious of this aim. As was said above, we must "enlist the child's intelligent interest in *drilling himself* by the best methods."

There are times when the teacher foresees the need for the *knowledge of some particular point.* For instance, suppose the first composition proposed for the Sixth Grade is the personification of two objects and a conversation between them. The teacher feels sure that the children will be rusty in the use of quotation marks, the vacation having elapsed since they were used in the Fifth Grade. A lesson period is devoted to review and drill in this form of punctuation, the children being told that they are soon to write a composition in which quotation marks will be especially needed.

A day or two later the children write their stories. Before they begin, they are reminded of the drill in the use of quotation marks and told that when they finish, they should look over their compositions with this point especially in mind. The teacher will find mistakes overlooked by the children. Instead of placing a mark by the error, she puts a ❡ in the margin, and the child must hunt for the faulty punctuation.

Sometimes a set of compositions shows a weakness common to the majority of the children, and one which has not

been anticipated by the teacher. Then the matter is discussed with the children and the needed drill given.

In addition to these lessons, planned for special occasions, there is provision for systematic drill in the use of the "English tools," which are to be especially considered during the year.

A system of diagnostic and review tests and drill exercises in formal English, similar in construction to those employed in arithmetic, has been formulated and mimeographed. Here are included all the simple sentence structures, and important punctuation marks which elementary children are supposed to master. The working details are precisely the same as in the case of arithmetical processes.

The English discussion periods are thus freed for the development and criticism of oral and written productions, which are considered for their literary merit. Errors made in these compositions are met again as "prescriptions" in the formal English periods.

SPELLING

The words for the term are dictated to the class before any are studied. Each child then studies only those which he has missed and when ready has his own list dictated individually. When he has written correctly all the words of his list two or three times, first for a classmate, then for his teacher, and then for the principal or her secretary, he is released from spelling study, unless recalled by words misspelled in written exercises.

Use of Time Saved from Formal Processes

As the term advances, several children in each class are freed from formal English or arithmetic periods. They have mastered the processes considered essential for their

grade. These periods, together possibly with time saved from spelling, constitute in the aggregate a good deal of time, although it is rarely that one child earns his release from all three types of work.

Unless a child so released is claimed by some other teacher in whose subject he is weak, he is at liberty to select his own occupation for these free periods. Art and handcraft projects are selected, plays are dramatized, stories and poems are written, and many children choose from lists posted on bulletin boards some topic in history, geography, or science, and delve into it more deeply than class time will permit.

DICTIONARY LESSONS

The dictionary is a tool needed by every student above the Fourth Grade. This fact has long been recognized and children have been provided with dictionaries, but very few teachers have realized that a dictionary is an extremely complex tool, and that children must be definitely taught how to use it.

It is quite astonishing, how clumsily even upper grade or junior high school pupils approach the looking up of a word after they have turned the pages to the initial letter.

We cannot too often remind ourselves of the danger of assuming that a certain skill or body of knowledge will suddenly and spontaneously descend upon children without their having been instructed therein.

There should be dictionary lessons at least through the Seventh Grade, and probably into the high school. A series of lessons used successfully for several years, will be given somewhat in detail.

To many generations of children, the dictionary has been a bugbear; frequent use of it a thing to be avoided. We

have attempted to invest it with interest from the beginning by making the initial lesson in its use more or less of a game. The teacher describes as vividly as possible an old-fashioned corncrib, the little building with its slatted sides, standing on upright logs, topped with inverted tin pans—to keep out rats and mice. She tells of the great mass of ears of corn thrown in helter-skelter, to be stored there until needed. Then she says:

"Suppose you knew that somewhere in that store house there was a black ear of corn—how would you like the task of finding it among the many thousands?"

The children see what an impossible undertaking that would be:

"I know a storehouse filled with quite as many objects, thousands upon thousands of them, each one much smaller than an ear of corn and all so carefully placed that any one can be found quite easily in a very few minutes. The whole storehouse is so small that I can hold it in my hand. Now what do you suppose it is?"

It is not recorded that any child ever guessed the riddle. All are immensely amused when they are told that the storehouse is a dictionary.

Then we proceed to find out how the storehouse is arranged, and how to hunt for an object in it. Of course some of the children think they know all about it, and are a bit scornful at first. But it soon develops that some of them do not know the letters in alphabetical order and we sing them through in the "good old-fashioned way." (We have found children in higher grades who were much handicapped in the use of the dictionary because of never having learned the alphabet.) The most scornful seldom get through the first lesson without finding that they do not yet know all that there is to learn.

Having established the fact that the words are arranged in alphabetical order, the teacher requests the children to so arrange several words which she writes on the board; for example:

tranquil
albatross
morose
exult

That completes the first lesson.

The next day the children are led to discover that the second letters of the words also are alphabetically arranged, and are asked to list properly a group like the following:

aid
abyss
accident
aghast
aerie
afire
admire

A third exercise takes into consideration the third letters of the words, calling for the rearrangement for:

absent
abacas
abed
abundant
aback

By this time the children realize that alphabetical arrangement of all letters is considered in placing a word in the dictionary, and are ready to practice finding some short words. The definitions are not considered at this stage. We play a game, the object of which is to see who can locate the words most quickly.

When the children have gained some facility in locating words, we begin to consider definitions. The wording of definitions is often obscure to the children. They need much assistance at first.

The children will notice the diacritical marks, accents, and letters indicating parts of speech and will want to know what they mean. They should be briefly explained, but the children should not be expected to learn to use them. It is enough for them to find the spelling and meaning of a word.

Fifth Grade children should not be expected to use the dictionary freely, it takes them too long to find a word. Brief exercises in looking up words such as are described above should be given rather frequently. When studying independently, history, literature, geography, or the like, and when writing compositions, the children sometimes should consult the dictionary, rather than the teacher, for the definition or spelling of a word. The habit must grow upon them through the grades.

In the Fifth Grade, the children should not be expected to look up verbs ending in *ed*, *ing*, etc. They should be given the infinitive form, and told that those endings make different forms. Suppose the word to be looked up is *ascended*. The teacher will write it on the board, draw a vertical line between the *d* and the *e*, and say:

"Do not expect to find that whole word in the dictionary. You will find *ascend*. *Ascended* is a form of the word *ascend*. Take the word *lift*, for instance. We say, 'I *lift* the book now; I *lifted* it yesterday; I am *lifting* it; he *lifts* it.' The word is *lift*, and the *ed*, *ing*, and *s* at the end of it make different forms of the word. Now let us look up the word *ascend*."

In case of a word of double usage (noun-verb) the children should be told which to look for:

"It is the first definition," or "It is the second definition," or "It is the noun or name—you will find an *n* after it," or, "It is the verb or action word, you will find *v. t.* or *v. i.* after it. Verbs, or action words, are of two kinds, transitive and intransitive. It will be several years before you will be expected to understand what those terms mean. You need only to remember that *v. t.* and *v. i.* stand for words which show action, not for names. I shall tell you whether to look for the word preceded by *v. t.* or that preceded by *v. i.*" [2]

The teacher should see to it that all words looked up under her supervision are correctly pronounced, giving the pronunciation clearly herself.

In the Sixth Grade, the children gain facility in locating words, but the process is still somewhat laborious. Only one new point is added,—namely, accent, which is taught in connection with exercises in writing poetry.

By the time the children reach the Seventh Grade, a fair proportion of them voluntarily make considerable use of the dictionary and the great majority recognize it as a valuable tool, though some of them still find it somewhat difficult to use.

In this grade, attention is called to diacritical marks, as a means of determining the exact sounds of the vowels, and the children are expected to find for themselves the pronunciation of many new words. The consonants with more than one sound must be considered at this time, and the children shown how to determine the sound in a given instance, as for example: gin (*j*in), gimlet (*g*im′let), cell (*s*el), camel (*k*am′el).

It is quite possible to interest children in the derivation

[2] We do not teach technical grammar in our elementary grades.

of words as given in an unabridged dictionary. They are often eager to know the history of a new word. "Where did it come from?" "What did it mean originally?" Very few Seventh Grade children manipulate the cumbersome volume skillfully enough to make it practical to demand class study of derivations, but it is well for the teacher to encourage the interest by frequently giving them to the class.

TEXTBOOK AIDS

All textbooks contain certain aids which may be looked at in the light of *tools* to be used in gathering and interpreting information. The attention which is given to the understanding and use of such tools will be illustrated by a statement of what is done with the Seventh Grade geography texts. Similar methods are employed with other textbooks.

The mastery of the tools of geography must begin before the use of the first textbook and continue with each new book placed in a pupil's hands.

Table of Contents, Index, Etc.

In each of our grades we begin with a preliminary survey of the textbook. The teacher's question, "How can we locate information in this book?" usually reveals some familiarity with the table of contents, appendix, index, and pronouncing vocabulary, so the treatment depends upon the advancement of the class.

With a Seventh Grade, a brief review is all that is necessary. Attention is called to the difference between the table of contents (the consecutive arrangement of the main topics of the book) and the index (an alphabetical list of all places, products, processes, tools, etc., mentioned

in the book). The children are led to see that the table of contents is useful mainly as an introduction, revealing the character of the book and its general plan. They are encouraged to consult tables of contents when selecting books for reference. The index is seen to be a tool which they will need to use very frequently in locating a number of facts.

Appendix

More time should be devoted to a survey of the kind of statistics in the Appendix.

A Seventh Grade using for the first time McMurry and Parkins' *Advanced Geography* [3] were much interested in such tabulations as double columns of figures, for example:

Population

Area in Square Miles
and

Population in 1910	Population in 1920

The data listed under the heading "Growth of the Fifteen Largest Cities of the United States," provoked many questions, some of which were answered by other pupils, for example:

QUESTION: Why are there blanks for Los Angeles and San Francisco in 1800 and 1830?

ANSWER: California was not part of the United States then, so we have no official records of these cities for those dates.

QUESTION: Why do some cities have a different number for each decade? Detroit is numbered 4 in 1920. It has these other numbers beside it, 23 in 1830, 14 in 1890, 13 in 1900, 9 in 1910.

ANSWER: The city grew from the twenty-third place to the fourth place among American cities.

QUESTION: Why did it grow so fast?

ANSWER: I think it was the automobile business that made it grow.

[3] McMurry and Parkins, *Advanced Geography*. The Macmillan Co.

It is well to leave the study of the appendix while the interest is still keen so that the children will return voluntarily to this section for needed data.

Maps

Seventh Grade children have been using maps for several years and are so familiar with many features that they need not be stressed, though some review may be desirable. One may be reasonably sure that they understand how mountains, rivers, cities, etc., are indicated. These things must be learned when maps are first used. A Seventh Grade teacher may assume, also, a working knowledge of the scale of miles. Very thorough drill in the use of such scales is given in the Fifth and Sixth Grades, for the scale must be *used* in order that the children may really understand it. In one Sixth Grade this was taken care of in mathematics in connection with parcel post problems.[4]

Certain other features will be developed as the need arises, for example, *isotherms* and *isobars*.

In this preliminary survey of the new book, the aim is to direct the pupils' attention to certain types of maps which are new to them and to lead them to appreciate their value as tools to be used while studying. A typical lesson is reported here:

TEACHER: Find the map of South America. Raise your hands as soon as you find it—(Pause) Yes, John, what page?
JOHN: Figures 251 and 252 on pages 246 and 247.
TEACHER: How did you find it so quickly?
JOHN: I looked in the Index for South America.
TEACHER: Henry, you also found it. What was your method?
HENRY: I turned to the Table of Contents.
TEACHER: Mary, what did you do?

[4] See pp. 134–135.

MARY: I looked at the page headings because I knew that there was sure to be a map at the beginning of the part about South America.

Mary had noticed the definite arrangement of the book by continents and she explained this to the class. By rapidly leafing through the book she could locate any continent in a few seconds and there at the beginning of the subject was the series of maps. The arrangement varies with the author and needs to be noted. This knowledge is in itself a tool. In the case of many books, Mary's method is time-consuming. In general the Index is the most reliable tool for locating maps. For this particular book Mary's method is very satisfactory.

TEACHER: Now turn to those maps of South America and study the physical map for a few minutes. What do the colors mean?

PUPIL: Green means lowlands—sea level to 1000 feet. The browns indicate mountains.

Other questions helped the children in their attempt to gather information from the map, for example:

How high are the Brazilian Highlands? The Andes?
How are shallow waters indicated? Deserts? Swamps? Waterfalls?

When the children showed some facility in reading the physical map, they were asked to compare it with the political map and to state the difference between them. One child's statement was especially concise:

"The physical map shows how nature made it, and the political map shows the changes man has made, like railroads, cities, and boundaries of countries."

Someone added "canals" and referred to a map showing many of them, and another child discovered a map showing highways.

A third type of map, combining physical and political features, was briefly discussed, as also were maps showing the distribution of population, temperature regions, annual rainfall, plant regions, and products.

Such questions as the following brought out the significance of each type of map in studying a region:

TEACHER: Notice the population map. Where do most of the people live?

PUPIL: Along the coast.

TEACHER: Why are there so few people in the Amazon basin? Does any other map help to answer that question?

PUPIL: The temperature map shows it to be always hot in the Amazon basin, while it is cooler in the Andes.

ANOTHER PUPIL: On the "Plant Region Map," it says, "Tropical forests—very little tillage in the Amazon basin."

TEACHER: Now, can anyone tell why such heavy forests grow there?

Someone discovered that the rainfall map gave 80 or more inches of rainfall for that Amazon region. The great heat and moisture and the seasonal floods, referred to by the teacher, were seen to be reasons enough to halt the spread of population there.

After such an introduction to the different types of maps, the children are expected to make use of them when studying independently. Sometimes their questions show that they have failed to do so. The teacher, instead of answering such questions, reminds the children that the books contain maps from which they can find the answers.[5]

Even with a Seventh Grade, such a survey of a new book will take at least two periods. As the work progresses, the pupils become acquainted with still other aids.

[5] In the study of history also much use is made of maps. Most modern history texts make provision for this map study. *America in the Making*, by Chadsey, Weinberg & Miller, D. C. Heath & Co., 1927, is especially valuable by reason of the explanatory notes connected with the maps.

Diagrams

Diagrams are studied with the subjects they illustrate. Special care is taken at first to see that the principle or process is understood by all. The diagram is usually more important than the reading matter, as it contains the matter in a nutshell. Often a pupil enlarges a diagram for class demonstration. For example, the cross section of a blast furnace lends itself to this purpose, different colors being used for coke, limestone, and iron ore. To explain this process becomes a topic recitation for one pupil.

Such diagrams as those that show the flow of pig iron, or the relative position of gas and oil in oil wells, are self-explanatory. Children like to enlarge a cross section of a coal mine, or to prepare a sand-table demonstration of an irrigation project, or to show how the Great Glacier dammed a river valley and formed a lake. A child must understand a principle to give form to it.

Graphs

Many geographies are introducing graphs, and care must be taken to teach pupils their meaning as this knowledge cannot be assumed. Even Fifth Grade children can learn to read graphs quite readily if care is taken to explain the scale, and they can make simple graphs with an easy scale.

To give an opportunity to use *judgment as to which tools to use* in finding many kinds of data, a miscellaneous list of questions was given to a Seventh Grade. It was given orally and the work was rapid. Seventeen questions were answered in twenty-two minutes. When five pupils had found the answer, it was called for. If, in their haste to be among the first five, the children made mistakes, other

pupils quickly offered corrections. The quickest told *how* they located the answers. The tool which should be used in each case is indicated in the following list:

How many cities of the United States rank among the 25 largest cities of the world? (Appendix)
Find pages which describe the formation of coal. (Index)
Where is anthracite coal found? (Index)
Where is Lake Agassiz? (Index)
On what pages is sugar cane discussed? (Index)
What is copra? (Index)
Where is asphalt found? (Index)
How many inches of rainfall do the East Indies have? (Rainfall map of Asia)
Where are the highest mountains in Asia? (Physical map of Asia)
Which is the longest river in the world? (Appendix—Largest Rivers in the World)
Has it the largest basin area? (Appendix—Largest Rivers in the World)
What is the Taj Mahal? (Index)
Where shall we turn to study Mexico? (Table of Contents or Index)
Where do most of the people of Australia live? (Population map of Australia)
How much rainfall has southern China? (Rainfall map of Asia)
What is peat? (Index)
Where is Sumatra? (Index, text, and map)
Where is Sakhalin? (Index)
Compare the altitudes of Mount Washington and Mount Whitney. (Appendix)

Each child was to keep a record of how many times he was among the quickest five in locating the correct answer. The interest in the search and the immediate pleasure in excelling, however, far outweighed the scoring which they often forgot. The teacher need not have introduced this device. The slower pupils showed need of further practice, which would come in the daily work. In assignments, the

teacher never gives pages but assigns by topics or problems, assuming a mastery of the use of the book.

The skill in the use of such tools as tables of contents, indexes, etc., acquired in the use of their textbooks is applied when using encyclopedias, atlases, *The World Almanac*, and other reference books.

CHAPTER X

EDUCATION: "A PROCESS FOR THE CULTIVATION OF ATTITUDES"

Ever before the teacher is the vision of the ideal student, the boy or girl equipped to study independently, intelligently, and with lofty purpose. Some days this ideal seems a veritable will-o'-the-wisp; days when all the pupils seem to have forgotten all the sensible methods we ever attempted to teach them.

Those are days when there is something wrong in the atmosphere of the classroom, the teacher is overtired or worried or just "plain cross." Ideals are elusive. Boys and girls are sensitive, shrinking into themselves in an unfriendly atmosphere, their minds not functioning normally unless in the classroom there is real comradeship between them and their teacher.

The terrifying effect which may be produced by the mere idea *teacher* is strikingly illustrated by the following incident. A teacher was standing one day in the Natural History Museum, studying one of the lifelike groups of birds, a pelican feeding her young. The mother bird's beak was open, the beaks of two young ones were within it, ready to receive the regurgitated food.

Presently five little "street urchins" came up to the case, boys ranging in age from about six to twelve years. After a moment of spellbound attention, the largest boy said in a horrified tone, "Aw, she's goin' to eat 'em!"

The teacher could not bear to have the good mother thus

maligned, so she explained the situation, and added some facts about the habitat and life of pelicans. The boys were interested, even ventured a few questions.

At last "de lady" passed on to another case, and behold, after her like the tail of a kite, came the five boys. For full half an hour the six of them went from case to case in the most friendly manner, discussing the characteristics of the different birds, the children asking numerous questions.

What she said or did that caused the boys to make the horrible discovery "de lady" never knew, but there came a moment of solemn consultation amongst the boys of which she heard nothing but the words, "She's a teacher." They were not addressing her so she made no sign, but passed on to the next case. When she got there there was no tail to her kite. The words "She's a teacher" had had the same effect as follows the ejaculation, "Cheese it! De cop!"

The thought of the experience has always brought some embarassment to "de lady." Was there, after all, something in her manner that was repellent to the boys?

Then she comforts herself. The boys *had* been interested, they had liked her until they found that she was a teacher. Then she was on the same plane as the "cop." Perhaps they thought she would "spring" an examination on them, and had no intention of voluntarily undergoing such torture. Still greater comfort comes from thinking over experiences in her own classroom, where the children certainly are not overpowered by the knowledge that she is a teacher.

In her class one day, a simple experiment was being performed. A boy made a statement in regard to the result which did not tally with the teacher's observation. At the moment she felt pressed for time, as she must hasten

to leave the room ready for another class, so simply negatived the boy's statement. Nothing more was said at the time, but the next morning another boy came up to the teacher and with the friendliest frankness said, "Miss ——, don't you owe Ralph an apology? I tried the experiment at home last night and he was right. You see it was this way. . . ." She listened respectfully to the boy's account of his experiment, saw her error, thanked him heartily for having set her right, and apologized to Ralph as soon as he arrived.

There are a good many classrooms in which a child would not dare to suggest that a *teacher* should apologize to a *pupil*, but it is only in those in which such an experience is possible that the best intellectual work can be done.

In the establishment of this spirit of friendly coöperation, perhaps no one thing is of more value than the custom of laughing *with* the children, laughing over jokes and humorous situations, laughing over the numerous irritating mishaps which cannot be prevented.

In a school visited several years ago, there was posted in the Teachers' Room a printed card:

Commandments for Teachers

(Of Which the Eleventh is Most Important of All)
Ethel Gessner Rockwell

1. Thou shalt have other interests besides thy schoolroom.
2. Thou shalt not try to make of thy children little images; for they are a live little bunch, visiting the wriggling of their captivity upon you their teacher unto the last weary minutes of the day; and showing interest and coöperation unto those who give them a reasonable freedom in working.
3. Thou shalt not scream the names of thy children in irritation, for they will not hold thee in respect if thou screamest their names in vain.

4. Remember the last day of the week to keep it happy.
5. Honor the feelings of thy children, that their good will may speak well for thee in the little domain over which thou rulest.
6. Thou shalt not kill one breath of stirring endeavor in the heart of a little child.
7. Thou shalt not suffer any unkindness of speech or action to enter the door of thy room.
8. Thou shalt not steal for the drudgery of many "papers" the precious hours that should be given to recreation, that thy strength and happiness may appear unto all who come within thy presence.
9. Thou shalt not bear witness to too many precious schemes of busy "work," for much scattered interest is a weariness to the soul and a stumblingblock to wee fingers.
10. Thou shalt not covet thy neighbor's room, nor her children, nor her manner, nor her system, nor anything that is thy neighbor's; work out thy own salvation with fear and trembling only don't let anyone know about the fear and trembling.
11. THOU SHALT LAUGH.
    When it rains and woolly-smelling wee ones muddy the floor; when it blows and doors bang; when little angels conceal their wings and wriggle; when Tommy spills ink and Mary flops a trailing tray of letters; when visitors appear at the precise moment when all small heads have forgotten everything you thought they knew.
    And again I say unto you, LAUGH, for upon all these commandments hang the law and the PROFITS in thy schoolroom.

Any classroom presided over by a teacher who keeps those commandments will have the "right atmosphere," be the equipment good or be it poor.

And in such an atmosphere alone can the independent student be nurtured, given some mastery over the various methods described in the preceding pages and enabled to acquire certain attitudes of mind which are of importance to himself and to his community.

In all our work there is one limitation to be always kept in mind; namely, the *inherent quality* of our pupils' minds, their original mental mechanism, their individuality—call it what you will. We cannot *make* children think. We can provide opportunities for the thought processes to take place and a friendly atmosphere to encourage them. This is all that we can do. Each child according to its own make-up will profit by whatever is offered to it. The mind produces ideas spontaneously or it does not. Identical situations yield absolutely different results with different children. It is certain, however, that no one makes the best possible use of his native endowment. There is no limit set to training children to use their minds to better advantage.

The one means at our disposal is that of widening their experience. "It is the person of large experience that is able to think out a problem, while *poverty of thought and poverty of experience go together.*" [1] Therefore, do we have children collect and organize data, not in order to amass and retain vast numbers of facts, but in order that from the associated ideas, new ideas may emerge.

But however skillfully the teacher may play the rôle of "efficiency engineer" in manipulating the conditioned reflexes with which her pupils' minds are built up, she is not doing them the greatest service unless, as rapidly as they can comprehend, she is acquainting them with the workings of their own mental machinery and showing them how to be masters of it. Quite young children can understand the essential meaning in many of the illustrations given by such authors as Burnham and Dorsey.[2] They

[1] Goddard, Henry H., *The Psychology of the Normal and Subnormal*, p. 161. Dodd, Mead & Co., 1919.

[2] Burnham, William H., *The Normal Mind*. D. Appleton and Co., 1924. Dorsey, George A., *Why We Behave Like Human Beings*. Harper and Brothers, 1925.

can understand that their mental processes and therefore their "opinions" are actually reflexes conditioned by their previous experiences, and, therefore, that it is at once their opportunity and their duty to enrich their own experience as far as possible. The absurdity of generalizing from one experience, basing upon it prejudiced opinion, likes and dislikes, etc., can be pointed out to quite young children. They will see it in an instance such as the following, especially if told that the little girl was their teacher.

A very little girl was taken by her parents to the Palisades above the Hudson. Too young to appreciate the grand panorama, she was left safely playing near the carriage, while her parents stood on the edge of the great cliff. A wasp stung the child, poisoning her severely. From this one experience she judged that she would always be stung if she went to the Palisades, and it was a long time before she could be persuaded to go again.

Naturally it is harder for children to detect instances of their own faulty reasoning. A conclusion reached from all known data *feels* so right, is to the reasoner so convincing. What we must strive to do is to get children's coöperation in habitually suspending judgment until a wide range of data has been collected and organized. Repeatedly we must force the pupil to say to himself, "Considering this and this fact, I have formed such an opinion, but are there not that and that and that still to be investigated which may change my view?"

There are many *attitudes* besides the suspended judgment, initiative, perseverance, etc., to which reference has continually been made, which it is the teacher's duty to develop in the child. But greater still is her obligation to train her pupils to foster these in themselves. Repeatedly do child students need to be reminded of the possibility

of *making* themselves *interested* in required material which may at first seem dull, and of their responsibility for doing so.

As already stated, an understanding of the *purpose* of a lesson is a necessary factor in disposing a pupil to respond whole-heartedly to the instruction. The pupils themselves should understand this. They should be told not to blame the teacher if they do not understand why they are to do a certain thing, and do not let it be known that they do not understand, that it is just common sense to *form the habit* of working with a definite purpose in mind.

From interest in the work itself, to interest in *improvement* on the part of the worker is but a step, but it is an important one. Much can be done along this line by regularly graphing such subjects as silent reading, the mechanical processes in mathematics, etc. The test of improvement in many subjects is more subjective. When only the teacher expresses an opinion as to the value of a recitation or written exercise the children do not grow in the power of self-criticism. It is helpful, after a written test, to have each child compare his answers with the text and write his own estimate of the value of his work. There should come a time when a child should be ashamed to say of a piece of work, "I don't know whether it is good or not."

Children should come to realize that the greatest reward they can win through study is the pleasure that comes through the sense of power gained, and the ability to use this power for the benefit of others. The sense in which we are using the word *reward* in connection with study habits is well illustrated in the statement in the chapter on "Self-Expression Through Composition," "The pleasure that comes to one who is able to hold the interest of the

class all the while he is talking is reward enough, and the dissatisfaction of the one who fails is punishment enough."

Another attitude toward life and work concerning which the teacher should not only be very watchful but for which she should steadily train the children to feel responsible is the tendency to waste energy in foolish *over-enthusiasm* which cannot persist.

With the new freedom in school procedure and the recognition of the importance of interest there arises a danger, that of confusing great *emotional excitement* with real satisfaction. We are all familiar with the fact that the extremely excitable person frequently proves to have less depth of feeling than the quiet, apparently unresponsive individual. We know also that the "same individual becomes, on the average, less excited in his work, the better he learns to work." [3]

Many a study project is marred by *over-excitement* on the part of the teacher, or pupils, or both. Swept on by the enthusiastic introduction to some project, children will undertake it when they have no abiding interest in it, and then must either be allowed to give it up or forced to go on with it "against the grain." In neither case are proper habits being established; indeed, much may be torn down which previously has been built up with infinite pains.

Where children are given free choice of projects, that choice should be made thoughtfully. It is well to let several days elapse before a final decision is reached, to form the habit of considering and reconsidering the pros and cons before casting the die.

Once the decision is made, the children should go about their work energetically but without too much jubilant

[3] Thorndike, Edward L., *Educational Psychology*, Vol II, p. 228. Teachers College, Columbia University Press, 1921.

demonstration. They can be made to understand that such manifestions of excitement use up nervous energy which might better be expended upon carrying out the project, and should be helped to train themselves to suppress these.

More devastating than joyous excitement is *worry*. Not infrequently a parent speaks with pride of the fact that his child is "so conscientious and worries so much about his lessons." The worrying student becomes the neurasthenic adult, suffering from "mental paralysis." This should be made plain to the parent and the child should be made to understand that worrying wastes energy and leads to inefficiency. If a child finds himself unable to stop worrying about his work he should seek help to find out why he worries, not go on and establish a permanent attitude of worry.

Thus we see that the ideal students of the teacher's vision have habituated themselves to certain permanent attitudes; to working purposefully and calmly without worry; to analyzing any subject matter with which they may be called upon to deal; to estimating ethical values; to questioning the validity of statements; to suspending judgment until sufficient data have been accumulated to justify generalization.

But habitual attitudes or reactions are *habits*, and when we are demanding that children acquire certain attitudes, we are demanding that they form habits.

Every teacher knows nowadays that the business of education is the business of forming habits. It may be all too true that in classroom procedure psychological laws are very generally neglected, but let us assume that most teachers know something of the learning process and the laws of habit. At their best they are too prone to be

satisfied if they are planning situations, conducting drills, etc., in conformity to these laws. Here, however, we are asking that the pupils themselves be trained into conscious recognition of them.

We find that Seventh Grade pupils at least are able to handle the idea of conditioned reflexes and are greatly interested in hearing James's classic statement of the laws of habit [4] and in trying to apply these in their own lives.

Children learn of great scientists and understand something of the importance of the laws they discover. Their respect for the educational process is greatly increased when they learn of the earnest research of such men as William James, and they feel a reasonableness in the demands made upon them. Moreover, James's forceful, figurative language appeals to them. Very little explanation is necessary.

1. In the acquisition of a new habit, or the leaving off of an old one, we must take care to *launch ourselves with as strong* and *decided* an *initiative* as possible.[5] . . . , Accumulate all the possible circumstances which shall re-enforce the right motives, . . . envelope your resolve with every aid you know.

2. *Never suffer an exception to occur till the new habit is securely rooted in your life.* Each lapse is like the letting fall of a ball of string which one is carefully winding up; a single slip undoes more than a great many turns will wind again. *Continuity* of training is the great means of making the nervous system act infallibly right.

We all know that it is much easier to launch ourselves vigorously than it is to follow the second rule and "never suffer an exception." Like Rip Van Winkle, we decide that we "won't count this time," then we are tempted to allow another exception, and so on, until we have lost the

[4] James, William, *Psychology: Briefer Course.* Henry Holt & Co., 1893.
[5] For this and the following law, James gives credit to Bain. *Ibid.*, pp. 145–148.

momentum of the fine start, and are back where we began; indeed we are worse off than if we had never made the start.

3. If we let our emotions evaporate, they get into a way of evaporating; so there is reason to suppose that if we often flinch from making an effort, before we know it the effort-making capacity will be gone; and that if we suffer the wandering of our attention, presently it will wander all the time. As a final practical maxim, relative to these habits of the will, we may then offer something like this: *Keep the faculty of effort alive in you by a little gratuitous exercise every day.*

This is hard doctrine for mere children, but we may be able to make them see that such a course will prepare them to meet life's emergencies nobly, and to do so is the aspiration of every right-minded boy and girl.

The expression "men are creatures of habit" sounds prosaic, unheroic; and youth longs for heroism. In time the young may come to realize the truth so picturesquely expressed by Thorndike:

There is no arbitrary *hocus pocus* whereby man's nature acts in an unpredictable spasm, when he is confronted with a new situation. His habits do not then retire to some convenient distance while some new and mysterious entities direct his behavior. On the contrary, nowhere are the bonds acquired in old situations more surely revealed in action than when a new situation appears. [6]

It is especially important to impress this idea upon the children with quick, brilliant minds. They react with gratifying alertness to first presentations but often they are shallow thinkers and display very poor judgment, lacking sufficient perseverance to acquire the material out of which judgments are made. Yet most of these children are looking forward to professional careers. They expect to become authorities and experts. There is a possibility

[6] Thorndike, Edward L., *Educational Psychology*, Vol. II, p. 28–29. Teachers College, Columbia University Press, 1921.

of their becoming instead tragic failures, outdistanced by their slower but more persevering comrades. Be the mind quick or slow, success comes as the result of application, the power of judging, through experience piled upon experience, analyzed, associated, built into a complex system.

James concluded his famous chapter on "Habit" with cheering words addressed to the persevering student:

> Let no youth have anxiety about the upshot of his education whatever the line of it may be. If he keeps faithfully busy each hour of the working day, he may safely leave the final result to itself. . . . Silently between all the details of his business, the *power of judging* in all that class of matter will have built itself up within him as a possession that will never pass away. Young people should know this truth in advance. . . .

We must be prepared to be very patient. The development of thought power must necessarily be slow, because the background cannot be hastily acquired. But we must never lose sight of the fact that in our striving to develop in our pupils the proper study-habits and desirable permanent attitudes towards life, we must rely more and more upon the coöperation of the children themselves. Gradually, they must become independent of their teachers, understanding how to direct their forces, how to apply for themselves the laws of mental growth. The *chief* responsibility for planning and directing remains with the teacher throughout the elementary school, but eventually the burden must shift to the pupil if he is to become the ideal student of her vision.

A skillful teacher has been called "a genius at human engineering." Training children to study means helping them to *form habits in the control of their mental machinery* so that at last they may become *their own efficiency engineers.*

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